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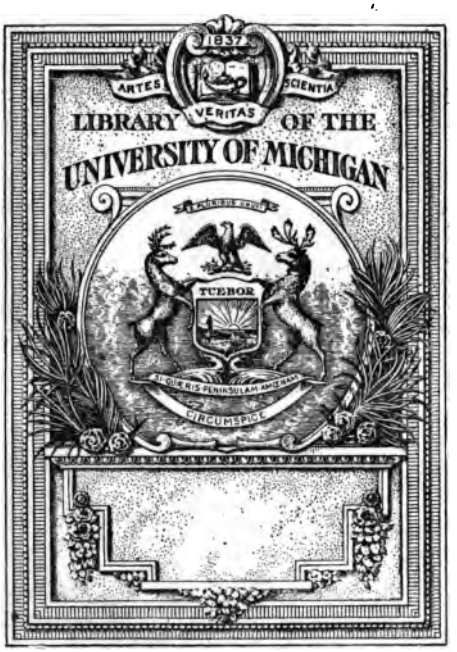
Managing A Business in War Time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This is Samuel McGowan, who buys for the Navy—he is a rear admiral, paymaster-general of the Navy, chief of Bureau of Supplies and Accounts—practically the "business manager" of the Navy.

MANAGING A BUSINESS IN WAR TIME

BUSINESS PRACTICES AND METHODS ACTUALLY TESTED UNDER WAR-TIME CONDITIONS, INCLUDING DATA BASED ON OFFICIAL BRITISH INVESTIGATIONS —SUGGESTIONS FOR DOING MORE WITH FEWER HANDS IN STORES, OFFICES, FACTORIES, AND FARM WORK

A. W. SHAW COMPANY
CHICAGO NEW YORK
LONDON

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MANAGING A BUSINESS IN WAR TIME

VOLUME II

332205

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PART III

WAYS FOR AMERICAN BUSINESS TO MEET WAR-TIME CONDITIONS

CHAPTER XX

HOW WILL THE WAR AFFECT BUSINESS?

By PROFESSOR RALPH E. HEILMAN
Department of Economics, Northwestern University, and Adviser to the Bureau of Business Standards of the A. W. Shaw Company

For three years business has had a chance to adjust itself to war-time conditions. The belligerency of this country has, therefore, come and gone with few drastic immediate changes. There are of course bound to be many readjustments, however, and this article indicates from the light of past experiences what some of these readjustments are likely to be. A careful study of it will probably suggest some of the steps necessary to take in order to prepare for conditions that may have to be met in many businesses. Professor Heilman is a member of the faculty of the Department of Economics at Northwestern University and a consulting editor of SYSTEM, the Magazine of Business, and writes, of course, from the viewpoint of a trained economist. One of the points he impresses here is that in the past high prices have customarily been the complement of war. This indicates the need for wise conservation of resources, as well as increased effort for greater production with less waste. Professor Heilman gives the economic reasons on which he bases his deductions and prognosis. Other chapters describe methods for effectively meeting the conditions he predicts as probable.

HOW will our participation in the war affect business, industry, and the economic life of the nation? These questions are difficult to answer. Indeed they are impossible to answer with confidence or assurance.

The difficulty of prophecy is rendered the greater because there is no exact parallel to the situation we now confront. Unknown factors are in operation, the outcome of which it is impossible to foresee. Measures of finance adopted both by governments and private business since the outbreak of the European war differ from

those used heretofore. Never before were credit facilities developed on such a prodigious scale. In no war since 1815 have more than three leading countries been engaged. In every war of the past century some or most of the world's great industrial nations have remained at peace, and have assisted the belligerent countries by financing them and furnishing supplies. But the present world struggle involves all the leading European nations as well as the United States. None of the world's first rank powers is at peace. The situation is unique and unprecedented.

While we must remember that we confront a wholly new situation and one in which it is dangerous to prophesy, there are certain economic results which may reasonably be expected. Of course, the extent to which our participation in the war will produce consequences of economic importance depends upon the scale upon which we conduct our operations, the number of men involved, and the duration of the struggle.

One of the consequences most surely to be expected is a considerable upward movement in prices. At first thought this might not be expected. The factor which has been most influential in increasing prices in the United States since the war broke out in Europe in 1914, has been the abnormal flow of gold to this country. The Federal Reserve Board announces that from the beginning of the war, in 1914, to the end of December 1916, there was a net movement of gold into the United States of approximately $870,000,000.

It is an elementary principle of finance that other things being equal the greater the amount of money in circulation the higher will be the general scale of prices. The shipment of gold to the United States, while it may continue, will probably be lessened. If the inflow of gold becomes less this should operate to impede the further upward movement in prices.

The expectation that the shipments of gold may be reduced is based upon two considerations. First, most of this gold has been used for the purchase of ammunition, supplies, and equipment in the United States. Those establishments that have been producing equipment, ammunition and other supplies for Europe may now be given over, at least largely, to producing supplies for our national defense. To the extent that this will prove true our exports will fall off. Other things remaining the same, this should cause a lessening in the inflow of gold in this country, and a check to a further rise in prices.

But no one can say with certainty that our exports will ever show a great falling off. No one knows how great our productive capacity may be if we must produce war supplies both for the Allies and for ourselves. It is now clear that our exports to the Allies will actually increase, that our navy will keep open the lanes of commerce, that our most effective method of fighting Germany will be to furnish the Allies with supplies. But even so it seems probable that exports will be paid for largely by the offerings of the bonds of the Allies in the American markets, thus reducing the shipments of gold. To the extent that the movement of specie is reduced, the strength of one important factor in producing high prices will be lessened to a considerable extent.

But even though the movement of gold becomes greatly reduced, it is not to be expected that prices will keep down to the pre-war level. In Europe, in spite of the great drainage of specie, which normally would cause prices to go down, prices have mounted. Forces may come into operation which will more than offset the influence of the decreased flow of gold. Indeed, these forces are already making themselves manifest. As a result of these factors we must expect a substantial upward movement in prices. The charts on pages 205 and

206 show the rise in prices in this country during the Civil War.*

What are some of these new influences operating to increase the general level of commodity prices?

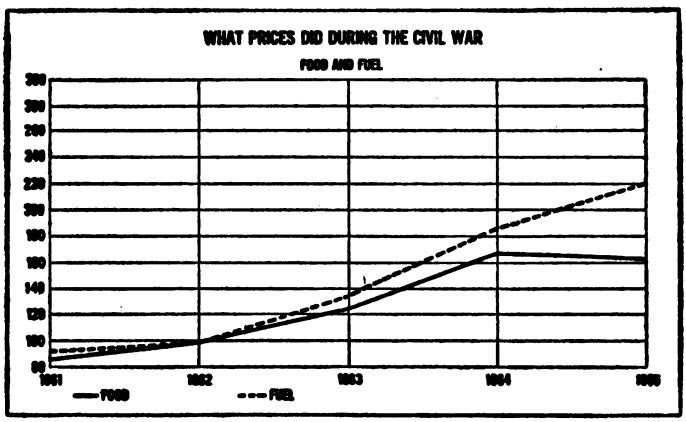
In the first place much of our productive apparatus is being directed into making war goods. How much of our productive capacity will be used in this way depends upon the size of the armies which we eventually raise, and the extent of the aid which we shall give the Allies.

Even before the outbreak of the war the Council of National Defense had completed a census of our industrial facilities, obtaining information as to the possible future rearrangement of our industrial plants on a war basis. It has been stated that in time of war anywhere from 80% to 90% of our industrial activity might be centered upon the making of supplies for the government. It is not likely that any such proportion of our total facilities will be used for this purpose for many months. But already plans are being made to transform many factories, especially those which are normally engaged in working with metals, into establishments for producing war supplies of all sorts.

As a result of utilizing more of our instruments of production and of our efforts in making war supplies, it is likely that the supply of commodities which enter into regular consumption in times of peace will be reduced. Likewise it is reasonable to expect that the supply of peace commodities, especially those things that are comforts and luxuries, will be somewhat curtailed, on account of the uncertainty of finding a market for them. To these influences must be added the very important consideration of higher labor costs, which seem inevitable and so, must be considered.

*These charts are based upon the index numbers given by the U. S. Bureau of Labor Statistics, Bulletin, Number 181. These statistics have some limitations but they suffice to indicate the upward movement during the Civil War.

Further, we cannot ignore the regrettable probability that efforts will probably be made to buy and to hold certain foodstuffs for speculative purposes. The supply of foodstuffs for the coming season cannot be predicted. It will depend, as always, largely upon the weather conditions. Many thought that the high prices obtained for last year's crops would stimulate increased produc-

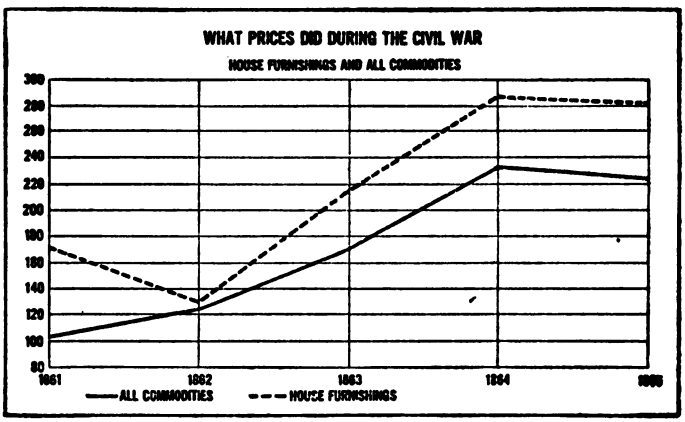


This chart indicates the rapid upward movement of wholesale prices of food, and of fuel and lighting, during the Civil War. The base (or 100) shows average prices for 1914. Note that at the outbreak of the Civil War prices immediately began to climb upward.

tion of agricultural products for this season. This would probably have been true had not war come, but it is necessary to remember that the labor supply on the farms has been considerably reduced. Many of the hired hands from the farms are drawn to the cities during the winter by the high wages prevailing there and are reluctant to return. The government's call for soldiers has also drawn upon the agricultural labor supply. If there should be any considerable reduction in the supply of foodstuffs and cereals, either because of bad weather conditions or because of a reduced labor sup-

ply, this shortage would only serve to aggravate the other factors operating to enhance prices.

One factor that partially explains the rapid rise in prices in most wars should not be present in the United States, in this one. That factor is the inflation of currency. The inflation of the currency by the issuance of the inconvertible "greenbacks" was one of the important contributing causes for the rapid upward movement of prices during the Civil War.



The mounting of prices during the Civil War is further shown by this chart. It indicates the wholesale prices of house furnishings, and also of all commodities. The average wholesale prices for 1914 are used as the basis for the comparison.

The results of such measures are now evident in Europe. There, large amounts of paper money not convertible have been issued. But there is no reason to expect that our government will resort to this device. With our large holdings of gold, our strong financial position, and our improved federal reserve banking system, we should be in a position to finance the war for a long time by more advantageous methods. But without the issuance of such irredeemable paper money, the

other factors already referred to are sufficient to justify us in expecting a substantial upward tendency in prices.

The prediction as to the probable rise in prices is not mere guesswork. Every important war, lasting for any considerable period, in modern times, has been accompanied by high prices in the countries participating. In the present European war, prices rose so rapidly that it soon became necessary for the governments to regulate prices of foodstuffs and necessities by law, a practice that is still in effect.

It is important to note that a rise in prices does not affect alike all kinds of businesses. Specifically, an upward movement does not ordinarily affect the wholesaler and the retailer alike. Normally, during an upward price movement, manufacturers' and wholesalers' prices rise further relatively, and rise much more rapidly than retail prices. Wholesale prices are much more subject to disturbances, they are much more sensitive to any change in conditions, and they respond more readily to any such change.

For these facts there are several explanations. The wholesaler and manufacturer are closer to the source of supplies. They frequently do business on a smaller profit per unit sold because of the large volumes they handle. Their buyers are accustomed to fluctuating prices. On the other hand, for most commodities the consumers are accustomed to established prices. These can be moved upward only with difficulty and the change involves the lapse of a greater period of time.

It would follow that if the war is prolonged, buying now, at least in certain lines, would be highly advantageous to the retailer. But it is necessary to be on guard against overbuying. For higher commodity prices will probably mean a falling off in consumer demand and a curtailed consumption, at least in many lines of merchandise and in some localities.

Another question of particular importance to both employer and employee is: What results will the war have upon wages? An advance in wages is clearly to be expected, the more so as it appears that the war will extend over a considerable period of time and will involve a large number of men.

In the first place, there will be an increased demand for labor, both skilled and unskilled, in the lines which produce supplies and equipment for warfare. The labor supply may be lessened because of the withdrawal from production of thousands of wage earners to take their places in the army and navy. Already this shortage of labor is making itself felt and the upward movement of wages is apparently inevitable.

But certain forces may operate to make the rapidity with which wages will advance less than might at first be expected. Wages always lag behind prices. Not even in war are we likely to find an exception to this rule. It is not unlikely that there will be a decline in the demand for labor in those industries not engaged either directly or indirectly in making war supplies. For example, we might expect a falling off in the demand in the building trades, in the manufacture of furniture, and in lines engaged in making novelties and luxuries.

Also, during times of patriotic fervor, the action of organized labor is usually less aggressive. Times of national peril are likely to develop a sense of oneness of interest which renders it difficult to make an appeal to the class consciousness of the wage earner. It is true that England has not been free from labor troubles during the war, particularly in the early part of the war. But generally speaking, labor organizations are likely to prove less aggressive and vigorous in pressing demands for increased wages in times of war. Of course, if prices mount to the point where the wage earner begins seriously to feel the pinch, there may be increased

activity upon the part of organized labor as a matter of self-protection.

It is reasonable that if the shortage of the labor supply should become more acute the situation may be met, and the upward movement of wages be somewhat impeded, by the entrance of women into occupations which hitherto have been regarded as being peculiarly men's work. The situation has been met in this way in Europe. Abroad, many women are now engaged in tasks not before performed by women.

HERE IS A QUESTION ALL BUSINESS MEN CAN STUDY TO ADVANTAGE

A question of importance to practically all who are engaged in business is: What will happen to the rate of interest? This question is not easy to answer. Upon it there are many differences in opinion. Some economists and financiers believe that it will not rise.

Whether there will be any important rise would seem to depend largely upon the length of the period necessary to carry the war to a successful culmination and the amount of capital required. It is apparent that there will be from one source an important increase in the demand for American capital: namely, from our government or perhaps from the Allies. At present it is impossible to state what methods of finance will finally be resorted to by the government. But whatever new methods of government finance may be adopted, it is safe to expect that the old and well-established expedient of issuing government bonds will be continued in any program of war finance.

Government bonds in time of war have ever made a strong appeal. Following the sinking of the battleship Maine in 1898, Congress authorized an issue of $200,000,000 of 3% 20-year bonds. This issue was immediately oversubscribed several times.

The increased demand for capital for government loans, from our own government, and from the Allies if this demand should be large and should continue so that much capital would be thus called for, would be a factor tending to advance the market rate of interest.

The upward movement in the rate of interest in times of war is frequently accelerated by the tendency of individuals to hoard. When there is uncertainty as to the outcome of events, many are seized with fright. They become reluctant to surrender their cash for fear of some unforeseen catastrophe, which may prevent its return. Or they fear the coming of hard times, or that soon higher prices will see them in great need. Therefore, they hold on to their money.

This tendency further manifests itself in the withdrawal of deposits, which aggravates the tendency toward tight money. It is claimed that during the period of the "war panic" in 1914, the hoarding of cash by depositors in the United States developed to such an extent that cash in the New York bank reserves—which at the end of July was $25,000,000 in excess of the legal amount required as the proportion of reserve deposits—fell in the latter weeks of August to over forty million dollars less than the legal requirement; and that it was not until the middle of October 1914, that this deficit was made up.

It is understood that the German government is endeavoring to prevent hoarding by regulating the withdrawals of bank deposits. This hoarding tendency during times of war lessens the available supply of capital, both for the government and private borrowing, and is an additional factor tending to produce a rise in the interest rate. It is to be hoped that this tendency will not manifest itself here, but it cannot be ignored that this trait in human nature is one important cause for the

rising interest rates that have usually prevailed in countries participating in war.

There are some who believe that there will be no upward movement in the interest rate as the result of the present war. They call attention to the fact that against the possibilities of further government borrowing there is the possibility of a decrease in the demand for capital and for credit in many lines of private business. It must be admitted that the declaration of war gave a great stimulus to companies in the production of war equipment and supplies. Enormous demands are being made upon these industries and many of them will further enlarge and expand their facilities. This will mean an increased demand for credit and capital on their part. Nevertheless, we are told that in other lines of production and merchandising which do not engage either directly or indirectly in the production or sale of government supplies, a period of conservation is to be expected. Probably there will be little expansion or new development in these industries.

An actual falling off in many lines in England is indicated by bank clearings there. For the second six months of 1914, the bank clearings in the great London institutions showed a decline of approximately 33% as compared with the same period for the previous year. For 1915, the bank clearings were approximately 9% less than for 1914. In all lines producing primarily peace commodities for the ordinary consumer, a protracted war on any considerable scale would be a curtailment of expenditures, and a lessening of consumption. Therefore, from these industries there would be a lessened demand for credit and capital with which to conduct their trade—an influence tending to hold down the rate of interest.

The patriotic devotion and loyalty of the American public is also relied upon by some writers to absorb the

offerings of our government, as well as those of the Allies, without any demands for higher rates of interest. That this may prove a factor of some consequence is not to be denied.

The results of greatly enlarged government borrowing upon the interest rate can readily be seen in Europe. Recent government issues in England have been made at 4½% to 5%, the latter representing the highest rate since the Napoleonic wars. France has issued her notes at 5½%.

The interest rate on government loans is of much importance to the business man. Obviously, an increase in the rate which governments have to pay to secure money means a corresponding increase in the rates which have to be paid for private loans.

To sum up, it is reasonable to assume that the war means an intensification in the shortage of the labor supply, increasing costs for most raw materials and commodities, a curtailment of consumer purchases in many lines, and possibly higher rates of interest.

Such conditions present difficult problems to the business man, the manufacturer and the employer, who desires not simply to conduct his business profitably, but also to conduct it in such a way as to promote the national well-being in time of war.

THE *industrial forces of the country, men and women, alike, will be a great national, a great international, service army—a notable and honored host engaged in the service of the nation and the world, the efficient friends and saviors of free men everywhere. Thousands, nay, hundreds of thousands of men otherwise liable to military service will, of right and of necessity, be excused from that service and assigned to the fundamental sustaining work of the fields and factories and mines, and they will be as much part of the great patriotic forces of the nation as the men under fire.*

WOODROW WILSON

CHAPTER XXI

THE PROBABLE EFFECT OF THE WAR UPON PRICES

Edited and Interpreted by ARCHER WALL DOUGLAS

In this chapter Mr. Douglas presents what amounts to a prognosis, based on his long contact with national business conditions, of war-time prices. It should be particularly valuable to you as a basis upon which to conceive and develop your own opinions. Mr. Douglas is an official of one of the largest concerns in its line in the world.

THE most serious business problem of the day is the matter of high prices of all commodities. It is perfectly obvious that they are due to an abnormal demand, primarily the result of the European War, supplemented by most unusual domestic prosperity.

The claim that the vast amount of money in the country is one of the compelling causes for present prices is the delusion of the text book theorist, and has no other basis than the indirect effect which this accumulation of currency has by furnishing a basis for that credit which must accompany and foster all commercial activities. Every impartial student, who is not endeavoring to exploit a theory at the expense of common sense, knows full well that if the continuing cause of high prices (war and its effects) be removed, prices must inevitably decline, because much of the demand will cease.

Such is the story of the past, as regards all great wars, and especially as relates to our own Civil War.

That business interest centers so strongly in high prices is due to the general recognition that the present level is entirely unnatural and tends to check demand, also that there must be an extensive readjustment in the not far distant future.

The universal experience of the past is that commercial buying will not be stimulated by a decline in prices, but just the reverse. For it is a matter of common knowledge that everyone buys freely on advancing market, and stays off on a declining one. It is obvious, therefore, that our present prosperity, so far as commercial activity is concerned, hangs largely on the trend of prices in the near future.

One compelling cause of high prices in munitions of war, that of foreign demand, seemed to be somewhat losing its force, so that lower prices in many metals were not unlikely. Just then came our diplomatic break with Germany to put an entirely new phase on the situation. It is more than likely that, so long as we engage in war, the demands of our own government will more than compensate for the coming lessening of demand from Europe in certain lines.

This demand will not only continue to be immediate and insistent, but will probably embrace every important branch of commercial life. Governmental needs for shells and metallic cartridges alone will call for vast quantities of steel and iron, copper, brass, lead, and zinc.

This means a continuation of that condition in all the metal trades where, for nearly three years, manufacturers, even of small tools, have been unable to obtain sufficient quantities of either raw or finished material, and consequently are unable to fill their orders with any degree of promptness. The leather business likewise feels the same effect because of the call for shoes and accouterments for the soldiers. This will also

be true of many kinds of cotton fabrics, especially such as relate to clothing and canvas goods.

The same story will apply to drugs, to everything demanded for camp life, and to a host of other business lines, which it is needless to recapitulate. It will be felt in the lumber business in the call for certain forms of building material. It will be noticeable in the demand for all manner of food products, for the American soldier is always well and liberally fed.

In fact, there will not be any commercial line of any importance, which will not feel the stimulating effect of the demand caused by the war upon which we have embarked. This demand will probably differ materially in its effect upon manufacturers and upon the distributing trade. It will naturally mean a great volume of business for the manufacturers so affected, and a great scarcity of these same goods for jobbers and retailers. For the country's needs must necessarily take precedence of private interests.

Another phase will be that of manufacturers, who make certain goods, practically turning their plants over to the government to make other lines, with consequent general scarcity for domestic purpose of the original articles. For instance, firearms of all kinds will doubtless be hard to get for regular uses.

The participation of manufacturers in government work will also introduce for the time being some complicated labor problems, which will naturally tend to increase the cost of production. It seems, therefore, that all these factors for the time being—that of the war's duration—can have but one effect: to advance still further prevailing prices in nearly all lines of business life.

Much of the effect of our participation in war depends upon the mental attitude of the people. Usually a conflict of this nature breeds caution and distrust because

of the natural uncertainty as to what the future may bring forth. We have had, however, three and one half years of contemplation and observance of a world-wide war, and so have grown somewhat accustomed to startling and unexpected events.

During that period of constant watchfulness we have waxed rich and strong as a nation in all economic ways, and today witness a domestic prosperity such as never before experienced. Moreover, we have seen the beginning of a campaign for intelligent nation-wide efficiency and have shown a capacity and resourcefulness for taking care of ourselves in emergencies which augurs well for the future.

YOU will probably be astonished to learn that customers of ours who bought butter at 50 cents a pound now buy margarine at 29 cents. And so fashionable has war-time thriftiness become that it is more profitable for a great store to cater in big value at a low price even to the wealthier classes, than to attempt to keep very high class goods on the counter at exorbitant prices.

THE LATE SIR RICHARD BURBIDGE
of Harrods, Ltd.

CHAPTER XXII

HOW TO GET THE MOST FROM THE FARM

By CHARLES K. WARREN
A Michigan Farmer

"Victory over militarism will depend as much upon the world's farmers in general, and those in America and Canada in particular, as it does upon the armies at the front," said Sir George Paish in an article in SYSTEM. And Mr. Warren, a Michigan farmer who is producing 50% more, and with fewer men at that, surely should be in a position to tell others how to secure the sorely needed increased production.

THE plans I am using this year will enable me to produce about 50% more of essential food crops than I did a year ago, and the best part of it is that I will produce that extra amount with less men than I had last year for the same work.

I am sorry to say that most farmers—at least in this community—have not become excited over the serious condition confronting our nation this year. I have been telling them that the United States will be the first country to starve because our sources of food supply are so greatly diminished that it is an absolute impossibility for the farmers to produce enough this year to give the supply we need for ourselves, to say nothing about the food we must send to our Allies.

Of course, I am not absolutely sure whether farmers in other sections are raising more this year or not, but I do know that in this community there will be but

little more produced than there was a year ago, when you consider the community as a whole. For a week early last spring the bank in our nearest town asked every farmer who came in if he were going to raise more crops that year than usual. Only two of the farmers who visited the bank during the entire week said that they had made plans to grow more.

About that time I secured figures from the government which gave a pretty clear estimate of the amount of food products in the United States, and I figured that it would take 5,000,000 hogs to put one ham or one shoulder—just one apiece—in each home in the United States. If all of the hogs that were in existence at that time had been slaughtered, there would not have been enough meat to do that. We didn't have the pigs—that's all—and we had no surplus to draw from.

If each family had been given 200 pounds of flour, it would have taken 50,000,000 bushels of wheat to make that flour, and there was not that much wheat in the United States.

I think those figures are enough to frighten any producer into believing that it is strictly up to him to raise all that he can. I talked with just as many farmers as I could this year, and I am glad to say that I was able to influence a few of them to put in extra crops, but what little we can do here will not have a very big effect on the big demand of the entire country.

Some of the plans I am using on my farm will even at this time be of value to others, no matter where they may farm, but, whether many will adopt them this year or not, all of the plans will be of practical value for next season and the season after that. I firmly believe that this crisis is going to teach farmers ways to economize and produce more and that these ways will stick with us after the war is over. When we find that we can produce twice as much on an acre,

we certainly will be foolish if we do not continue to produce all we possibly can, even when the country does not need so much food as it does today.

Labor-saving machinery has done its share toward increasing the production of our country, but I am afraid that many of us have depended too much upon this source of saving labor. We have not used our heads as much as we have the machines. In fact, I sometimes think we have neglected to use our heads because we have believed that the machines alone would take care of the situation.

THIS PLAN LED TO A 50% CROP INCREASE— AND WITH FEWER MEN

The increased crops I will have this year are largely a matter of planning, rather than a matter of buying new machinery. I already had most of the labor-saving machinery I needed, but I found that by changing my plans just a little I could actually produce 50% more of the essential food crops without keeping as many men.

A year ago about one ninth of my entire farm was devoted to sugar beets and peppermint. While the country needs these crops, it does not need them so much as it does corn, and so I am devoting these acres to corn this year.

I had 40 acres all ready to plant to alfalfa—had the seed bought, and everything—but when I got to figuring and found that the country needed other crops more, I changed my plans and put these 40 acres to peas. There is a pea cannery right near my place, and 40 acres of peas will go quite a long way toward feeding a good many people.

Those who have the opportunity to raise a crop such as this may be interested in a plan I am using to get the utmost out of this crop, not only in food value but in profits. Instead of hauling the peas on the vine to the

cannery, I have a pea viner which takes the peas out of the shells at home.

This pea vine silage is unusually good cattle feed, and although the 40 acres will not produce enough to fill my big silo, I will get the utmost from the crop by feeding the silage to the cattle, and selling the peas to the cannery. Moreover, I save a great deal of time in the pea harvest season by doing the work at home instead of sending my teams to the cannery, where they must wait sometimes for an hour or two before the wagons can be unloaded. I put just as many teams to hauling peas to my viner as I know can be kept constantly busy. One man operates the viner, and there is no lost time whatever as you can see.

The viner itself is owned by the cannery, which supplies it to me without cost. The only expense I have is to furnish the power, and I would need to have this power anyway to fill the silo; so you see, the plan is really costing me nothing, and is saving me a great deal.

I will get two crops off of about one third of my farm. The first crop will be corn on part of it and oats on the rest. The second crop will be turnips. The turnip seed I will sow at the last cultivation of corn, and in the oats it was sown with the oats. When the oats is cut, the turnips will come on, and I believe will make a good crop at this particular time.

I am beginning to think it is high time American farmers took some examples from farmers in foreign countries. Take the potato proposition, for example. I know of a farmer in Scotland, who is one of the biggest potato growers there, who actually plants 50 bushels of seed to the acre. We think we are extravagant here if we plant 15 to 17 bushels, but our returns are much less in proportion to his. He gets around 700 bushels, while we get from 100 to 250. Instead of cutting the potatoes into small pieces like we do, he plants

First, the tractor is used to cut down on horse labor. Second, the grain is being mown for hay so that a second crop of millet may be raised on the same land—a worth-while plan you'll admit.

This ice was stacked against the barn and covered with straw and a tarpaulin. The ice kept almost as well as in an ice house—money was saved, and the country was benefited.

Although a motor truck is used for most of the hauling, when it comes to tasks like this the tractor often can do better. And it performs a patriotic duty, too—releases labor.

Although the hay rake is not a full load, it is more economical to pull it in this way than to keep horses. This provides another hint for the patriotic farmer.

the entire tuber, and he doesn't use the little fellows, either.

I had 100 head of hogs all ready for market. Every one in the bunch was well fattened and would have brought a dandy good price. Thirty of those hogs were sows, and when I realized that my country was going to need every pound of pork that could possibly be produced, I held out those sows and bred them. The result is I have about 250 pigs more than I would have had if those sows had gone to market. I admit that it takes a lot of nerve to hold out a sow that has been fed on $1.50 corn and plan to feed her another year on corn that will be worth just as much, or maybe more, but when you come right down to the bottom of it, you must agree that I haven't taken quite such a chance after all, because with the immense scarcity of hogs, the price for pork is certainly going to remain at a point where pork raising will be profitable, even with the high price of corn.

HERE'S SOME ADVICE TO AMERICAN FARMERS THAT IS TIMELY

I rather think American farmers have been a little bit too prosperous. We haven't felt the pinch of hunger in our stomachs, and, consequently, haven't figured out ways to eliminate wastes. This year, in addition to our own wastes on the farm, our country has to deal with the immense waste in the army. It takes much more to feed a soldier than it does to feed that same man in private life. It probably can't be helped, but we must recognize that it is true in order to get busy and produce more than we have been producing.

So far, you see, I have not spent any money for extra equipment. In order to get more out of my flock of sheep I had to build a new sheep shed—or, at least, that is the plan I followed. The building itself is built with a monitor roof, and is 256 feet long and 90 feet wide.

The inside is divided lengthwise into three parts of equal width. On each side of the building is a row of pens 30 feet wide, and in the center is a driveway 30 feet wide. There are eight pens in all—four on each side. These are, as you can see, of good size, and the reason I made the pens so large is that the greatest economy I expected to make from the use of these pens was to cut down on the number of men to care for the sheep.

To show you how I succeeded, let me say that during the past winter I handled 700 sheep and 200 hogs in this barn, and one man has done all of the work, except at lambing time, when I gave him an extra man to help him for a half a day at a time now and then as occasion demanded.

HERE AGAIN WE HAVE AN EXAMPLE OF HOW CAREFUL PLANNING SAVES

By building the pens large, it is possible to drive in one side and out the other with a load of hay, so that instead of carrying hay the mangers are all filled direct from the wagon. There is a water trough in each pen, which is filled by a faucet connected with a water tank at one end. A gasoline engine is used to fill this tank, which, by the way, is not large. This cares for the water and the hay. The grain is fed in the driveway in the center, thus saving more labor.

The driveway is divided into four sections, the same as the pens on the side. These sections are separated by gates. The troughs are filled with feed before the sheep are let out, which every sheep raiser knows saves a great deal of time. There are no sheep bothering around to interfere with the workmen. When the feed is all ready, the gates to the pens are opened, and the flock is let out. Inasmuch as the sheep from each set of pens—that is, one on each side of the barn—are separated by gates, it is not difficult to get the proper ones back into the proper

pens. While the sheep are eating, the workman goes through the pens and does little odd jobs that he can do better when the sheep are not there to bother him.

In order to get service from this building the year around, I put a hay track in the center of the driveway. In the summer, when we are busy with haying, instead of taking the time to bale the hay in the field, we haul it into this barn. Then later, when we are not so busy, we do the baling there. You will see that in this way the weather does not interfere with it at all. The barn holds a lot of hay, because it is 30 feet to the gable and 20 feet to the lowest part of the driveway roof.

I expect to make about $9,500 from my 750 head of sheep this fall. The lambs I expect to sell for about $7,500, and the wool for about $2,000. The beauty of it is that one man has done practically all of the work to make this $9,500. With the old plan of caring for sheep it would certainly have taken most of the time of three men, and at a greater cost.

The barn cost $5,000. I feel that this building has saved me 10% of my lambs, which means $750. The wages for men saved certainly amount to at least $250. That makes $1,000. I saved about 20% of the feed because it was warm and it took less feed to keep up the animal heat. We lost only five sheep in the barn last winter, and two of them were drowned, which could, of course, happen anywhere. I figure that the barn at this rate will pay for itself in three years. I got the idea of building it in this way from Kelly Brothers, Indiana sheep feeders. They have a barn just like mine, only twice as long.

The way I reduced my help was to cut out those crops that require so much help—such as sugar beets. I haven't added any labor-saving machinery this year, but I was already using two tractors.

I have a plan in one of my cattle barns which saved labor and quite a little expense in building the barn. Instead of building a feed bunk on each side of the feed alley, I put a tight floor in the alleyway itself, and used this for a feed bunk.

I raised the wages of my men last year. I felt that I would have to do it later on anyway in order to make the men stay, so I did it before they asked for more wages, and in this way, I believe, I will get more loyalty than I would have if I had waited until they forced me to it. We farmers have to get used to the idea of paying more for help, because men can get more wages in other lines of work, and we will probably always have to compete with factories for our labor.

BOTH as a civic officer and as a business man, the problem that has most strongly impressed itself on me is that of man-power. It may be frankly admitted that in this country, as in many other of the belligerent nations, we made grave mistakes at the outset. We put men into the army who should have been on munition work; we took men from the land who should have remained at the plow; and we put in substitutes in munition works who should have been in the army."

SIR CHARLES CHEERS WAKEFIELD, BART.

CHAPTER XXIII

THE 20 MEN BEHIND THE LINES

By PROFESSOR RALPH E. HEILMAN
Department of Economics, Northwestern University, and Adviser to the Bureau of Business Standards of the A. W. Shaw Company

For every man who fights, it is said, there are about 20 men behind the lines to provide the supplies needed to carry on the war. The proper handling of this army of industry compares in importance with training the men who fight. This chapter describes some methods that should prove most effective in meeting employment problems arising from the war.

HOW to conduct his business with less labor, how to fill the places of those entering the various branches of government service, where to find acceptable substitutes for them, how to meet the rising wage scale—these and similar problems are pressing the business man.

The outstanding fact in the present situation is the shortage of labor. It must not be forgotten that our situation is different from that in any previous war. It is now the task of American industry not only to supply our own government with supplies and equipment for naval and military purposes. In addition we must provide munitions, military and naval supplies, as well as foodstuffs, clothing, and commodities for civilian consumption to the allied countries. No such obligation has ever rested on us in our previous wars. To provide for the wants of our people, of our government, and of the Allies, our industries must be fully manned. This means the strongest sort of a demand for labor.

To meet this demand, we shall soon have a diminished supply of labor. The inflow of labor which in the past has been made available through immigration has been largely cut off. Immigration into this country averaged 100,678 per month during the years of 1913 and 1914, but it fell off to 46,808 a month in 1916, and to 19,238 in February of 1917. The literacy test law, recently passed by Congress, means that henceforth we shall receive less immigrant labor than formerly even after the war has closed and peace conditions resume.

Further, many employees have entered various branches of the government service. The universal service bill will cause great additional gaps in industry. Many of these vacated places are difficult to fill with men possessing the requisite training and ability.

An increased demand and a supply less than would normally be available—these, then, are the conditions in the labor market. It is uncertain whether the tendency on the part of consumers to economize and to curtail expenditures will be carried so far as to decrease materially the demand for commodities which enter into ordinary consumption during times of peace. Such a decrease in demand is conceivable. If it occurred, much labor ordinarily engaged in producing these commodities would be released. Then the decrease in the demand for labor in industries producing such commodities might offset the increased demand for labor in other industries. But at the present time such a probability appears remote, though a possibility.

Various proposals have been advanced as to how the situation may best be met. Perhaps the method which most quickly occurs to the minds of many is to increase the length of the working day. If labor is scarce and wages are high, why not require as a war measure that the hours of labor should be increased? As a matter of fact, employers who endeavor to meet the situation by

passing the burden on to employees, will find the policy disastrous, even as a temporary measure.

The most conclusive evidence on this subject is to be found in the reports upon the output of British workers engaged in manufacturing munitions and in allied industries. Three separate but cooperating bodies investigated this subject. These investigations concern themselves with the output, health, and hours of workers engaged in munition plants, and in preparing and wrapping lint and surgical dressings.

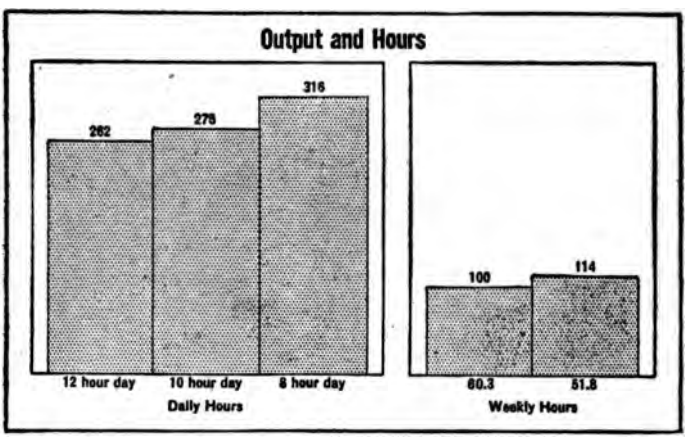
WHAT BRITISH INVESTIGATION OF HOURS AND OUTPUT INDICATED

The operations were carefully studied. Scientific examinations were made. Studies were conducted of the relation between output and the length of the working day, and output and overtime. Generally speaking, it may be said that these reports agree that long hours or continuous and sustained overtime produce a loss in efficiency and in the productive power of the workers. The results of fatigue, due to prolonging the hours, have been measured. These measurements indicate that the effort to extend the hours has generally proved uneconomical in the long run.

In England many munition plants have worked their employees 10, 11, 12, and even 15 hours a day. In many of them employees have worked regularly for seven days a week. The Health of Munition Workers Committee says in its findings: "Taking the country as a whole, the committee are bound to report their impression that the munition workers in general have been allowed to reach a state of reduced efficiency and lowered health, which might have been avoided without reduction of output by attending to the details of daily and weekly rests."

Excessive fatigue is shown to increase the irregularity of employment due to sickness among employees. Says

the committee: "A recent inquiry showed that in two departments the sickness rate among men on overtime was 5.5, as against 3.7 among those on double shifts." Professor Kent—who conducted another investigation—indicates that the suspension of overtime, in one instance, reduced the loss of time occasioned by the absence of employees on account of sickness by 4.5%.

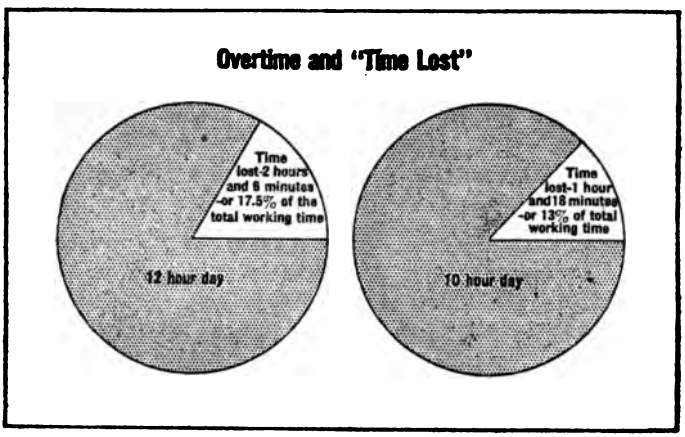


The chart at the left shows the average units of output per hour of one worker on 12-, 10-, and 8-hour shifts; that at the right indicates the increase in relative output of another group of workers when they were employed 9 hours less per week.

In stating their objections to the prolongation of working hours in munition plants the Munition Committee says: "At one time cases of men working as much as 90 hours a week were common; more recently there has been a tendency to reduce hours, but even so, totals of 70 and 80 hours are still frequent. Some overtime among this class is no doubt inevitable, but the committee are satisfied that hours such as these cannot be worked with impunity, and they most strongly urge that every effort should be made, either by 'dilution' of labor,

or otherwise, to extend the shift system to this branch of the industry, as rapidly as possible."

The evidence submitted in these British reports is conclusive that if hours are unduly prolonged through the practice of working overtime, output is actually diminished. In one case, cited by Professor Kent, the elimination of two hours of overtime beyond the regular 10-hour day brought an absolute increase in output of 5%. As indicated by the chart on page 230, one group of eight workers increased the average hourly rate of output during the morning period from 262 to 276 bobbins, as the result of shortening the hours from 12 to 10, and to 316 when the hours were reduced to 8.


Overtime and "Time Lost"
Time lost-2 hours and 6 minutes -or 17.5% of the total working time
12 hour day
Time lost-1 hour and 18 minutes -or 13% of total working time
10 hour day

Excessive overtime, British investigators showed, led to much "lost time" in starting, stopping and resting. The circles above represent 12- and 10-hour days, respectively. The segments show the portion of the time that was lost.

Further, it was found that overtime increased the "lost time" upon the part of the employees while they were at work. As indicated by the chart on this page, experiments conducted with one group of workers indi-

cated that the time lost at starting and stopping, and in other ways, was 17.5% of the total time of the working day, when 12 hours were worked, but when the hours were reduced to 10, it was a much smaller proportion of the total. This was due to the fact that with the increase in the hours of sustained effort, the application and concentration of employees were relaxed, although probably unconsciously.

The extension of the hours of labor beyond what would constitute a reasonable standard in times of peace, or the continuous use of excessive overtime, is further seen to be undesirable when it is remembered that for this inefficient effort, expended when fatigue is greatest and production least, the employer is generally required to pay a higher rate of wages than during regular hours.

Other methods suggested for meeting the present situation are the larger employment of women in industry and an increase in the efficiency with which labor is applied, directed, and supervised. These suggestions offer real hope, and within certain limits are both feasible and desirable.

The extent to which it is possible to use women in industry successfully is one of the wonders of the war. It is a surprise both to the business world and to women themselves. At the present time in Europe women perform much work which previously was regarded as being exclusively men's work. There has been a great rush of women into places left vacant by men. Indeed, but for women, it is not likely that the European countries could have continued production as they have.

Women have proved proficient not only as factory hands, but even as street railway "motormen," conductors, ticket agents, and in many other capacities. Probably the most important place in which they have successfully substituted for men, in large numbers, is in the office staffs and in the lighter factory occupations.

These seem to be the places in which women may be used with greatest success in the United States.

Many women who formerly hesitated to become wage earners, because they feared loss in social standing, will now in time of national crisis become available for employment. Even before the war an increasing movement of women into the wage-earning ranks was taking place in the United States.

It cannot be ignored that the employment of women will raise some important economic and social questions —particularly after the war. There are certain limits beyond which the employment of women, as a permanent policy, cannot go, without loss and injury to society. Probably many of the women who are now entering industry will withdraw after the war, and take their places as wives and mothers. Others will withdraw because there will be a greatly reduced demand in the occupation which called for their service. No doubt others will retain their places as wage earners. The process of readjustment may give rise to some difficult problems. These after-the-war problems will have to be met. But, at least as a temporary policy, to enable America to carry on her industries efficiently during the war, the larger employment of women seems both necessary and desirable.

It is important now that every employer should make a study of his establishment for the purpose of deciding what places can be most easily filled by substitutes, as the men are called upon to serve their country. An analysis should determine what work can be done by women, if need be, even though in some cases it may not be done so effectively. Furthermore, the analysis should include a study of the work which might possibly be transferred to other departments of the organization, or to other individuals. It should include the considera-

tion of what work might be omitted, and what work might be sublet to other concerns.

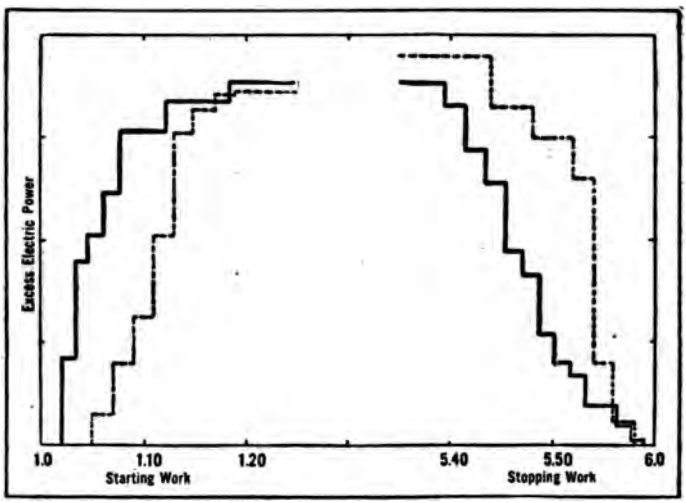
In view of the fact that little can be accomplished by prolonging the hours of employment beyond a normal peace standard, it is desirable to increase the effectiveness of effort during the hours when employees are actually engaged. One of the most important ways by which efficiency of effort may be increased is the wider use of methods of compensation based upon the achievements of the individual. In other words, measuring work, wherever this is possible, and basing remuneration upon the individual's measurable results, tends to increase efficiency. If properly safeguarded, it induces more careful use of time and energy. This ordinarily means an increase in individual earnings and increased production for the employer.

HAVE YOU EVER THOUGHT ABOUT PAYING YOUR EMPLOYEES ON A SCIENTIFIC BASIS?

Many methods of compensating employees upon a basis of individual or measurable results have been evolved. Two of the simplest forms are the old-fashioned piece-rate system; and the commission system, as applied to salespeople. Many of the newer forms go under the name of "efficiency," "scientific management," "bonus," or "premium" plans.

The essential thing about them all is that they contemplate a wage based, at least in part, on the individual's results, rather than simply a flat day wage. Many of these newer plans guarantee the employee his regular wage, and offer an additional inducement for production, sales, or achievement, in excess of a stipulated amount. No uniform method is equally well adapted to all businesses. The best methods of compensation must be worked out to fit each industry.

The important thing is that each business should have plans of compensation which offer a special inducement to effort, rather than methods which may tempt men to loaf on the job.



To make munition workers as effective as possible, studies have been made in Great Britain of the causes of "time out." The delays in two plants at starting and stopping times—figured from the power meters—are shown graphically in this chart.

If such methods of payment are to be used it is highly desirable to have them introduced in such a way as not to antagonize employees. Much of the opposition of employees to the introduction of such plans in the past has been primarily due to the tactless and inconsiderate way in which they have been introduced, and to the feeling of employees that their rights or interests were being ignored. But if plans are introduced in such a way as to safeguard the rights and protect the interests of the employees and enlist their support, and not to deprive them of any of the rights which they already have won,

then the cooperation of employees may be secured and their efficiency enhanced. It seems highly probable that the war will be accompanied by a larger use of such methods of compensation, so introduced as to appeal to the cooperation of employees.

The desirability of doing everything possible to lessen the rate of labor turnover becomes greater than ever, with the war. The rising scale of wages and the increased demand for labor is likely to cause much shifting among employees. They, like everyone else, seek an opportunity to dispose of their ware—labor—on the most advantageous terms. The increased demand for the services of women is likely not only to increase the supply of women workers, but also to cause much shifting among women who are already employed.

The British Association for the Advancement of Science has just completed a study dealing with the employment of women during the war. It found that many women in England have changed their normal occupations to war work paying higher wages.

The report says ". . . there has been an enormous amount of redistribution of women within their own occupations. Thus, the individual woman, though still doing what is generally considered woman's work, has in many cases left her own industry and entered another. This has caused a deterioration in the quality of labor available for many occupations. Skilled women, for example, have left laundry work, and to fill the vacancies, charwomen and shop assistants have been engaged. The same difficulty has been met with in textiles and in other industries. Such transferences are uneconomical, because they mean bad work at present and because where a woman's skill 'lies,' as it often does, in her deftness of touch she may lose it altogether in the heavier work to which she has sometimes transferred herself."

There has been a tendency among employers who use largely female labor, to think that they would be immune from war disturbances among their workers. As indicated by this quotation, probably nothing could be farther from the truth. The probability of many withdrawals and changes and of a rapidly shifting labor force among female employees has been materially increased by the war.

HERE'S ANOTHER PHASE OF THE LABOR PROBLEM YOU WILL NOT WANT TO OVERLOOK

Indeed, the danger of instability of the labor supply has been increased for male as well as for female workers. The increased demand, the excitement of the situation, the fact that many of their companions are changing jobs, the prevailing high wages, the realization that under present circumstances other jobs can be secured—all these factors are likely to tempt workers to transfer their services from one place to another.

The present situation, however, is one in which such instability is particularly undesirable. Breaking in new employees is expensive. The disorganization of a staff, through withdrawals and rapid changes, may prove serious. It will probably lessen output and increase costs. It may interfere with the completion of war contracts. Certainly the danger of a rapidly shifting labor force is to be carefully guarded against in the present circumstances and in the future.

One employer recently said that he had found a simple method of retaining his workers. It is to pay them a wage which slightly exceeds the market rate. This, he says, causes them to prefer to remain in his employ rather than to go elsewhere. True, his policy may not always be applicable. For there is no standardized market wage for some kinds of labor. Or if there is, it may not be possible to exceed it. But there can be

no doubt that one of the most important measures in reducing the rate of labor turnover is the payment of an adequate wage. Employees are much more interested in the contents of their pay envelop than in any deferred bonus or pension plan, or in any kind of welfare work. The occasional granting of unasked-for advances in pay is likewise a strategic move to encourage length of service. These advances, coming unsought and unsolicited, make the employees glad to remain.

Another vital step is to select the right men for the jobs. Under normal circumstances men should be carefully examined to see that they fit the task to which they are assigned. Under present conditions it may prove difficult to apply any selective process rigidly, because of the scarcity of applicants. But it will frequently be possible to transfer men misfitted to their work, to other work for which they are better qualified, and thus to prevent their withdrawal.

Providing steady work will also prove especially helpful in these times. When the demand for labor is keen, men can hardly be expected to remain with their employer if they are kept idle much of the time.

Much has been said since the outbreak of the war regarding the necessity of eliminating waste, but it should be remembered that however careful the management may be in its planning, the reduction of waste depends largely upon securing the cooperation of employees to accomplish this purpose. The raw material, the commodities, and the equipment, the waste of which is to be reduced, is largely entrusted to their hands. It is not sufficient for the management to decide to reduce waste. Employees must also become impressed with this necessity, as a war-time measure.

Various methods are now being used to accomplish this purpose. A Chicago manufacturing establishment has appointed a committee on waste, consisting of certain

employees occupying the more responsible positions, and chosen from various departments. This committee, as a result of its conferences, has already made some important recommendations to the management, pointing out how much waste of time and effort might be avoided by making slight changes in the construction of the receiving and shipping rooms. The cooperation of this group of employees has been won by placing upon them the responsibility for guarding against waste.

Other establishments are offering prizes, bonuses, or special inducements to employees, to enlist their efforts in the campaign for economy. For example, some concerns offer special premium payments to firemen, if they can reduce the amount of coal used for certain purposes. Others, particularly those dealing in fragile commodities, have measured the normal breakage or damage in the packing, shipping, and receiving departments, and offer special payments to employees engaged in these departments for reducing the breakage or damage below the stipulated point.

Another factor in the present employment situation is the increased danger of industrial accidents. The employing of many new workers, unfamiliar with their tasks, who must work under high pressure, calls for increased vigilance in the prevention of accidents. The British Health of Munition Workers Committee states:

"Moreover, at the present time the introduction of new labor and of employees unaccustomed to the processes concerned, particularly in conjunction with the need for speed and pressure, overtime, and night work, with the consequent fatigue, must inevitably lead to greater risk of accident and injury."

That this danger is a real one is further evidenced by the fact that American companies which write compensation insurance report a marked increase in the number and severity of industrial accidents, during and since

1916. This increase is doubtless due in large part to the increased employment of workers unacquainted with their work, the pressure for increased output, and the disregard of safety rules and precautions which accompanies the speeding up of industry. During the next few months many more workmen and women will be placed in new jobs for which they are not trained. This means a greater necessity for the introduction and careful maintenance of safety measures.

The present industrial situation is one of vital concern to all business men and employers. Adjusting or reorganizing his business, so that it can best meet the present crisis, is the patriotic duty of every producer. For victory depends upon the armies of production as well as the armies in the training camps and in the trenches.

THE war is bringing to the minds of our people a new appreciation of the problems of national life. These and other lessons of the war must be learned quickly if we are intelligently and successfully to defend our institutions. When the war is over we must apply the wisdom which we have acquired in purging and ennobling the life of the world.

WOODROW WILSON

CHAPTER XXIV

MOTOR TRUCKS: A WAR-TIME ALLY

Collated by the Editorial Staff of SYSTEM, the Magazine of Business

You'll probably find these plans which point out ways for moving your finished products and getting your raw materials particularly interesting as long as freight congestion makes prompt delivery an unusually puzzling problem. When the war began, British firms confronted with railroad congestion turned to the motor truck almost entirely to meet their transportation demands. That we will have to do the same here to a large extent is perhaps more than a guess.

A NET profit of $30,000 a year is what six motor trucks earn for the owner of a building material and coal yard in the West; and this profit is earned after a depreciation charge of 33⅓%, interest at 6%, and all operating and repair expenses have been charged. Revenue from the trucks is figured on the ton-mile basis at the rate which would have to be paid if the hauling were let to a contractor.

Back of these large earnings is the system that keeps the trucks actually hauling 20 hours a day. No time or labor is wasted in loading or unloading, and during the four hours in which the trucks are idle, they are thoroughly inspected and put in such good repair that a breakdown during working hours is practically unknown.

Wear and tear is minimized by routing over the best roads. Often the shortest route is not chosen if the longer one will be easier on the truck. A map of the city and vicinity, on which is indicated the kind and condition of all roads, is the only route board used.

The biggest single factor in earnings is the quick loading and unloading. All trucks are equipped with power dumps. At first the coal, stone, or sand was loaded into the trucks by hand. This took 20 to 25 minutes, and required the labor of four or five shovelers, at a cost of about 18 cents per cubic yard of material. On this basis the trucks earned only about 6% on the investment.

Today, the trucks are loaded from the overhead steel hopper shown on this page in an average of 60 seconds' time. This hopper is built of steel on a concrete foundation. It is loaded by means of a locomotive crane equipped with a 54-cubic-foot clam shell bucket, as well as by a stiff-leg derrick with the same bucket equipment.

Any loose material, such as sand, stone, and coal, may be successfully handled in this way. The material and the conditions of the business in this case make handling easy, but the principle back of it is fundamental—trucks earn dividends when they are hauling—time wasted in loading or through breakdowns is money lost.

HERE A STEEL TRUCK ON WHEELS MEANS ANOTHER MAN RELEASED

A steel table on wheels takes the place of one man in loading each motor truck at a western plant. Before this table was devised, two men were required: one to pass the packages from the chute into the truck and one man in the truck to pile them. As there are usually six trucks at this platform loading at a time, the saving amounts to about $90 a week.

Packages slide down a steel chute from the second floor. When an empty truck backs up to the platform the table is drawn into it so that the packages slide from the chute along the table well into the front of the truck, where they are piled by the driver. As the front of the truck is filled, the table is rolled back, so that the last

Formerly six helpers were required at this plant to carry packages from the chutes to the drivers, who piled them. The table now does this work and draws no pay besides upkeep cost.

This truck works all the time at its real job, hauling. The demountable body is loaded while the truck is away, and is lowered into place as soon as the truck is ready.

This woman is wearing a special corset designed to prevent injury from the strain of the heavy work. The necessity for this precaution is explained by Lord Leverhulme in Chapter II.

These girls supply another example of the type of war-time service undertaken by hundreds of thousands of English women. They are driving the delivery car of a concern whose men are at the front.

packages put into the truck are discharged directly from the chute into the truck body.

Considerable time was lost, in an eastern public service company, whenever a construction or repair gang found itself without some needed material or tool. The delay attendant upon calling the supply department and waiting for the truck to make a special trip with a single tool was expensive, as was sending out the truck with only a light load for but one job.

THIS SPECIALLY DESIGNED TRUCK CUT WASTED TIME MATERIALLY

A special truck was designed to cut this expense. It carries, in special compartments, a day's supply of practically everything that an outside gang can need. The supply is replenished each night at the warehouse. Loaded in this way, it makes the rounds of the various jobs, and seldom has to go back to the supply department for material or tools. Since it was first put in service the wasted time has materially decreased.

Loading and unloading a number of small items cheaply is often difficult. One concern, whose deliveries of materials go to numerous outside construction gangs, borrowed an idea from a grocery store. Needed materials had had a way of not getting left at the right places, and this had, of course, been expensive to the company. By loading each "order" into a separate box, the errors in delivery have been almost entirely eliminated.

Another field where the difficulties of loading economically and cheaply are great is in transferring brick from cars or flatboats to trucks. When horse-drawn trucks were used for hauling, the time taken in loading 1,500 brick—the average wagonload—was not out of proportion to the time on the road delivering them. The coming of the automobile, with generally almost double

the wagon capacity and half the traveling time, at once made this proportion a ridiculous one.

One contractor is escaping the difficulty by using the principle of the demountable body; several different applications of it are in use by his fleet of trucks, for he is still experimenting. The demountable body itself works well, for while the truck delivers one load, another is being prepared. The chief objection is the expensive and elaborate apparatus that is necessary for lifting and suspending the bodies.

The trailer—practically a demountable body on its own wheels—accomplishes much the same thing without the use of any special machinery at all. Dump bodies, moreover, can be fitted without any difficulty to trailers and operated either by hand or by power from the truck ahead with entire success.

Skiffs have also been satisfactory. These are individual compartments, cheap low platforms with one high end. The loaders fill them while the truck is away. When it returns it backs up, inclines the body as in dumping, and then quickly hauls the skiffs up the inclined floor by its own power winch.

Four skiffs are used with some trucks, eight with others. The body is then returned to the horizontal position. When the load reaches its destination the body again inclines and the skiffs are hauled out by the winch, with no damage to the brick.

A plan that does away with one handling, and consequently with the need for several employees, is certainly worth while in these days of labor shortage. That is what an eastern department store has accomplished by having its electric motor trucks load inside the building of the various floors. The freight elevators carry the machines to the desired levels, thus saving completely one handling of merchandise. A consequent increase in delivery speed is also noticeable.

This same store makes a small but material saving in connection with its gasoline delivery equipment through a little plan that was first worked out by the merchandise manager in his private garage. It prevents the loss from tires rotting in oil or the alternative expense of keeping one man at the job of cleaning off the floor.

Instead of having the floor one solid sheet of cement, he left a two-by-three-foot pit directly under where each engine stands. This is filled with coarse sand and gravel.

It does away completely with the oily floor nuisance. When a driver wants to drain his radiator he simply opens the pet cock and lets the water soak into the sand. Whenever the pit becomes too oily, the garage superintendent sees to it that it is refilled with clean sand. Compared to the cost of having the floor cleaned frequently this is an inconsiderable expense.

HERE'S A TESTED PLAN THAT COULD BE USED IN NEARLY EVERY BUSINESS

"It used to be our experience that furniture was either delayed in delivery, very often, or in other cases was delivered only at an excessively high cost," says the delivery manager of a large company. "We do a general department store business, and furniture is one of our profitable departments. The reason for the trouble lay in the fact that we usually waited until we had a complete truckload, holding back some deliveries, meanwhile; or, when we did make a special trip without a full load, the cost was excessive.

"We found our remedy in devising a new kind of body for some of our trucks. We divided the new bodies into two sections, front and back, which are separated from each other by a screen. The front section we use for package deliveries, and only the rear section is devoted to furniture.

"The arrangement enables us always to have a full load, thus assuring complete use of the trucks—and besides that, furniture is delivered to our customers just as promptly as any other goods we sell."

Demountable bodies used by one wholesaler who delivers within a radius of 30 miles save him thousands of dollars annually. The bodies are trussed up to the shipping platform and loaded. The truck then backs up under the load, it is dropped on in a few seconds, and the truck is under way again without loss of time.

By this method the concern is able to get along with fewer trucks and fewer drivers than when considerable time was wasted by the ordinary loading plans.

LABOR, *capital, finance, transportation, science, each of these organizations should be put on a war footing and called on for its special war work. When this has been done, all of them should be knit into one strong and sensitive entity, and the whole nation will thus be efficiently at war. To employ the tried brain, and the well-oiled wheels, is my advice to America.*

SIR CHARLES W. MACARA, BART.

CHAPTER XXV

A SHORT CUT IN FINANCING

By W. R. BASSET
of Miller, Franklin, Basset and Company

War inevitably means a tremendous demand for men, money, and material. Increased production is the natural reaction of industry to this demand. This increased production, in many cases, means extension of plant, or larger purchases of raw material, and this in turn calls for more capital. How to get additional capital at this time becomes a vital war-time problem, involving both the factor of wise conservation and the pressing war-time necessity for increased output. Mr. Bassett bases this chapter on the results of investigations carried on by several manufacturing plants in which the need for additional working capital was met by cutting down wastes of both time and material through the introduction of better production methods. Of course, the elimination of waste means the saving of money, which then can be applied as new working capital; in other words, the financing of a business from the inside. In one plant investigated it was found $84,000 could be saved annually by the elimination of unnecessary walking and waiting by workers. The description of this and other savings made combine to make this chapter one of the most useful in the book.

WE cannot extend without more working capital—we have plenty of orders in hand and we could find more business; but we can hardly swing what we now have with our present funds—let alone take on bigger volume of business."

I do not know how many thousand manufacturers make the foregoing speech or one very like it during the course of the year. I would say that 99 out of every 100 manufacturers are unable to talk of their affairs for half an hour at a stretch without get-

ting around to the insufficiency of their working capital. It is rare to find an individual, firm or corporation that is satisfied with the supply of current working capital. Most commercial failures are due to inadequate working capital without question of doubt.

A freely flowing capital is essential to industrial success. But how many manufacturers are awake to the fact that it is possible to increase the working capital without fresh money? That usually the real trouble is not so much shortage of working capital as it is the shortage of work for capital? Only a negligible percentage of business men look over their plants to see what their cash is really doing throughout the day and night—whether it is working.

To the man who says to me, "I need more capital," I can say, without investigation: "You do not need more capital, you need better production." And I shall be right so often that the exceptions will only go to prove that the rule is correct.

Better production is attained by better planning. Planning is something more than a method of helping regularity in deliveries. The true end of planning is so to conserve the use of the capital that it will move quickly from the initial point of its employment—the purchase of the raw material—to the final point where it again becomes money in the bank through the sale of the finished product. Or to put the case a little differently, planning has as its object the increase of the rate of turnover by the decrease in the amount of capital represented by goods in process. It is self-evident that if money is tied up only a short while in manufacture that it will be quickly available for the financing of another process. Doubling the turnover will more cheaply and economically achieve the result that might have been achieved by doubling the working capital.

Business does not need half the money that is put into it. Having investigated hundreds of plants I am more than ever convinced that business men are overlooking the simple, obvious improvements in production because of the energy they give to the pursuit of new capital.

The story of a plant which we recently analyzed will bring out the truth of my statement more forcibly than would reams of economic principles.

This plant has been annually doubling its business throughout nearly a decade. Of course the owners thought that they needed more capital. Every business which increases at such a rate is always crying: "More capital, more capital, more capital."

IN ONE YEAR THE RATE OF TURNOVER WAS NEARLY DOUBLED

The company made one product—an automobile accessory; they carried no finished stock, but delivered directly from manufacturing. I found that the process inventory amounted to $800,000 and that the finished product was turned out at the rate of $300,000 per month, calculated on its cost value. Dividing the inventory amount by the production sum gave 2.6 months, or eighty days, as the rate of turnover. We—both the plant people and my associates and myself—believed that this rate could be cut into halves and we set to work to make the cut; after a year's study and work, the same monthly production as before was carried on a process inventory of $450,000 which gave a turnover in 1.5 months, or 45 days—a reduction of 35 days. Instead of borrowing money to make extensions, the company was able to do the old amount of business on one half the former capital, or to double its old volume on the same capital.

Now when that company needs more working capital, the officers do not hie themselves to the bank—they go

into the shops to see if the place that grew two dollars where only one grew before, could not be pursuaded to grow a few more!

The officers of the company are broad-minded, intelligent men, but they had been so absorbed in the selling of the product and the growth of the business that they had overlooked the production feature. They did not know that they had overlooked production—they had really given considerable attention to that end, but their perspective had been faulty. They had not been able to get far enough away from the business to gain a clear view of what was really happening.

We found that instead of a factory, the management had unwittingly established an industrial Marathon. Just about one half of the time of the men was devoted to walking from place to place and the other half was devoted to work. Stock, tools and implements were so arranged that even the most conscientious workman had to spend nearly one half of his time in walking. The workmen were paid just as much for walking as for working; which meant that a goodly share of the concern's capital was walking instead of working.

We studied the methods and the men and made recommendations and changes gradually along these lines:

1. The creation of a production department
2. Rearranging the machinery in sequence of operation
3. Determination of machine capacities
4. Determination of standard time units
5. Determination of desirable order units
6. Establishing a wage incentive payment plan

The factory had been added to from time to time as the business increased, without much attention to the relation of the addition to the whole works; the men most intimately connected with production had grown

You would be surprised to know how cheaply portable houses like these can be put up. This sort of housing tends to develop better workers at a time when our country needs the best we have.

Perhaps here is one reason why the men stay home. Saloons lose much of their attractiveness when the men have homes like these to go to. "Ready made" houses are extensively used.

Do these look like company houses? That's what they are. All the floor plans are the same, but there is none of the "two peas in a pod" appearance about any two of the 25 different exteriors.

Three families live here. The economy in construction and upkeep of an apartment house can often be combined with the advantages of a dwelling, as has been done here.

with the plant and they were working by rule of thumb rather than with exact knowledge.

Here are some of the wastes that were discovered and some of the methods which were employed to correct the wastes. These instances are specific and taken from this particular plant, but the principles which are involved are to be found in almost any manufacturing business.

Starting at the beginning it was discovered that the raw material inventory was wasting about $25,000 a year through needless labor. The stock room carried from 3,500,000 to 5,500,000 pounds of steel a month, while the largest amount of steel used in any month was only 51%, and the smallest was 17½% of the whole. This gave an average stock rate of turnover of once in 100 days. Twice as much money as necessary was being tied up in stock. That rate of turnover was reduced to 60 days, and it was provided through the planning department for the placing of orders sufficiently far ahead so that the stock would not fail.

Careful time studies were made of most of the operations in the plant with startling results. In assembling into a finished article workman A took from 78 to 157 seconds, with a standard of 100 seconds; workman B took from 294 to 514 seconds, with a standard of 335 seconds; and workman C took from 187 to 408 seconds with a standard of 250 seconds. If we call A 100% efficient; then B was only 30% and C was only 40% efficient; translated into a day's labor, A would turn out 324 units in 10 hours, while B finished 94 and C 130 units respectively.

These men each received the same wage; it was evident that by standardizing their operations and putting them on a piece rate, a great saving would be effected and the workman's pay would be more equitable. In the rough reaming of eyes on certain parts we found that 60.7% of the total time for the job was consumed

in waiting for material or in walking to pick up or put down material. In handling of the heavier parts, 75% of the men's time was spent in walking. In the assembly stage, the idleness through walking or waiting amounted to 1⅓ days for each gang of five men per day. In another gang two operators frequently had to go to the stock room for bolts and while they were away, four other men were held up. When the steel had been sheared to length it was placed on the floor instead of on the truck; we figured out that this cost $2.42 an hour per gang. The non-productive labor ranged from 12.8% to 26.4% of the whole labor roll and it was not decreasing; the productive hands spent 15% of their time merely in walking. On the single item of unnecessary walking and waiting, due to the bad arrangement of the plant, we found that $84,000 a year might be saved—$84,000 is 6% on $1,400,000!

THIS PLAN FOR ROUTING WORK WAS FOUND SLOW AND INEFFECTIVE

The plant had been divided into departments according to the operations necessary in making the article sold. As each operation was finished, the stock was taken on to the next department by hand or by trucks moving over uneven floors.

The whole plan of operations was made over by substituting six units. These units were practically separate manufacturing establishments each equipped to turn out a complete article, and although all were on the same factory floor they were divided one from the other by high woven wire fences with an opening at one end where the steel came in, and an opening at the other where the finished product went out. The work traveled through without a single backward movement. Electric trucks, conveyor furnaces and a slow-moving electric table gave the needed flow of work and each operation

was done in its proper sequential order by standard movements of the employees. No one had to wait for material and no one had to walk away to get anything. The work went to the men, not the men to the work. Another advantage of the units was that only one style of work would be done in a unit, thus eliminating the chance of a man not having the proper tool at hand. Each unit could always be worked to its full capacity; if orders were slack, the whole shop did not have to be run at a percentage of its output and with corresponding waste—one or more units were shut down and the others continued at peak.

The store room was wholly revamped. A crane was installed to handle steel from a railroad siding that was put in and the steel was stored in convenient lots. It had been the custom to cart the steel to the shears for cutting to proper lengths. Instead an electric shear was put on tracks. The shear, traveling to the steel, saved one item of handling, and as the bars were cut they were dropped on a platform which was later picked up by an electric platform truck and carried to the unit for fabrication. These comparatively simple changes saved $35,000 a year in trucking labor.

A production department was organized, under a production manager, to plan and route the work. When an order is received, it is transmitted to the engineering department, which arranges the specifications. Then the sheets are turned over to the order department which makes out and forwards a production order. The production order gives all the details of the job.

The production department has two divisions—the material and the planning; the first keeps track of the material on hand and required and the second of the progress of the work. The production order being received, the material is first arranged and the planning department looks at its control board to ascertain the

How Committees Work in One Factory

Name of committee	Committee consists of—	It meets—	What it does—
Administrative	President, Assistant General Manager, Secretary, Treasurer, and Works Manager	Fourth Monday of each month at 2 p. m.	Works out all the larger policies of the company
Finance	Secretary, (Chairman), President, Treasurer, and a representative of a banking firm	Third Monday of each month at 4 p. m.	All matters relating to finance
Sales	Large committee, President (Chairman), Sales Department, Road Engineering Department, Secretary, and Works Manager	Third Friday January, March, May, July, September, and November at 3 p. m.	Determines salesmethods and campaigns
Manufacturing	Works Manager (Chairman), President, and Assistant General Manager	Second Tuesday of each month at 11 a. m.	Plans process of manufacturing and routing—is a factory board of strategy
Engineering (Has two divisions)	(Research Division), Laboratory head, head of Experimental Department, and new members added for particular work at hand. (Engineering Division) Works Manager and five engineers	Every Monday at 8 a. m.	Conducts research and experimental phases and passes upon all designs
Purchases	Assistant General Manager, Secretary, and Works Manager	Every Morning at 8:15 a. m.	Passes on purchases, plans future buying
Safety, Welfare, and Employment	Secretary, (Chairman), Assistant General Manager, and Works Manager	Omces month immediately after Purchases Committee meeting	Safety, welfare, and employment problems
Patents	President, Assistant General Manager, Works Manager, and six men from various departments	First Monday in the month at 2:30 p. m.	Investigates all patents submitted; recommends purchase or rejection; and authorized to employ a patent attorney
Salaries	President (Chairman), Secretary, and Assistant General Manager	Fourth Monday of February, May, August, and November	All questions of salary or wage increase or decrease
Sports and Recreation	Works Manager (Chairman), Secretary, Assistant General Manager together with Manager and Assistant Manager of each team	Second Tuesday of each month following Purchases Committee meeting	Controls all sports
Costs and Efficiency	Works Manager (Chairman), Assistant General Manager, and a representative of consulting efficiency engineers	---------	---------
General Executive	Assistant General Manager, (Chairman), Sales Manager, Chairmen of Engineering, Manufacturing, and Finance Committees	---------	---------

The time of meeting of these individual committees is carefully planned in relation to the personnel of the committees. This chart is that of an American plant, but Chapter III tells how a British concern successfully uses a similar plan.

unit through which the work will go. Having decided on the set-up and route, "shear" and "operation cards" are issued. The shear card is authority to the stock room for shearing the stock and delivering it to the designated unit; the operation card is then given to the unit foreman and, as each phase is completed, the card for that detail is returned to the planning department and placed in the planning board.

This planning board is an important feature—the controlling feature of the production department. It consists of 20 sliding metal panels, 29 inches wide and 50 inches high enclosed in a metal case. The side of a panel has 480 pockets. Each vertical row contains the history of the progress of a lot through the factory and each horizontal row is devoted to a similar operation in the several lots. When a card is missing from the pocket it means that particular phase of that order is then in progress. By means of the control board the production manager can always know the stage of the work in every unit—he always knows where he stands as to both orders in progress and orders waiting to be filled, and can take proper action.

Having standardized the time for operations and the material for operations, it is an easy matter to measure the labor and material required for future orders and the time that it will take to complete them. Payrolls and financial requirements during the next 30 or 60 days for operations are thus readily ascertained and the sales department can always be kept accurately informed as to the ability to take on new orders and when they can be delivered.

Many other changes were made toward economy in the plant. It was found that some tools and machines were being repaired at a cost greater than the replacements by new machines; repairs were standardized. Figures were procured, gained by experiments, on the

most profitable sizes of orders to handle and these determined how large the unit lots should be. It was found that lots above 3,600 pounds tied up too much of the plant, and therefore large orders were split into smaller lots. A new system of timekeeping was evolved that saved a great deal of clerk hire and gave more accurate figures. Wages were put on a piece-rate basis with a bonus for work above standard.

All these changes were made more or less slowly and with the full approval of both the executives and the working force. Both were quick to see that each would gain by the elimination of waste. Had there been opposition, we would have gone still more slowly—for no system is good enough to be forced down the throats of a working force. The system may be good enough at the beginning of the forcing process but it will hardly amount to much by the time it has been fully forced down their throats.

There was nothing magical in all these improvements —they were simply the application of common sense to the conditions. No extension of plant was made and very little additional equipment, excepting trucking and conveying appliances, were purchased and yet this company which thought that it so sorely needed added working capital, found that it was using only half of that which it already had.

The banker is not the only financier of a business.

WE have found that we can, to a large extent, supplant the skilled worker by the unskilled, and the unskilled worker by women. Women's labor, as a rule, is much more satisfactory and conscientious than that of the unskilled men. Such is my own experience, and I suppose I am one of the largest employers in this country.

LORD ABERCONWAY OF BODNANT

CHAPTER XXVI

OUR FLAG: ITS LAWS AND CUSTOMS

Collated by the Editorial Staff of SYSTEM, the Magazine of Business

Our flag, of course, is a supremely interesting symbol in these days when our boys are following it into battle. Perhaps some of us don't know that its use in advertising—except to a very limited degree—is unlawful. Naturally none of us wants to do anything which might be interpreted as flag desecration, and therefore this chapter on the laws and customs affecting the national emblem is included here.

THE entrance of the United States into the world war has naturally quickened interest in the national flag. There are certain general customs in handling and showing respect to the national emblem which, through long usage, approach the nature of regulations, although they are not in every case legal requirements. It is valuable for everyone to know these few general rules:

The flag should not be dipped in response to a salute.

The flag should never be draped, but always arranged to hang in straight lines. Draping may properly be effected with strips of red, white and blue bunting; never with the flag.

In portraying the flag by printing or any other illustrative process, the staff should always appear at the left, with the fabric represented as floating to the right.

The correct salute to the flag as required by the regulations of the United States Army is: Standing at attention, raise the right hand to forehead over the right eye, palm downward, fingers extended and close to-

gether, arm at an angle of forty-five degrees. Move hand outward about a foot, with a quick motion, then drop to the side.

In using the flag as a cover for an altar or table it should be arranged so that the blue field is at the left as one faces it from the front. Nothing but the Bible should ever rest upon it and it should be arranged so that a gavel will not be likely to strike it.

THE USE OF THE FLAG IN ADVERTISING GENERALLY IS UNLAWFUL

With but few exceptions the use of the United States flag in advertising is unlawful. In many States such a use carries with it an imprisonment penalty. The use of the State flag in advertising is likewise prohibited in most States.

The above statements make it apparent that the business man is treading on "thin ice" when he makes use of the national emblem in commercial advertising. There are stringent laws against this in effect in most States and the higher pitch of patriotism brought about by a state of war will probably result in a greater activity in watching for and prosecuting violations. With this idea in mind a digest is given below of State laws regulating the use of the flag in advertising. It is alphabetically arranged for convenient reference.

A federal statute provides that registration as a trademark may be refused if the mark "consists of or comprises the flag or coat of arms or other insignia of the United States or any simulation thereof * * *."

The business man in studying this compilation for "donts" in flag advertising may take the Idaho statute as typical. It will be noted that there is need of avoiding the use of even a representation of part of the flag, as for instance a picture of "Uncle Sam" wearing a flag suit.

Alabama—Essentially the same as Idaho, except that the Confederate flag is protected also.

Alaska—"Any person who, in any manner, for exhibition or display puts, or causes to be placed, any inscription, design, device, symbol, portrait, name, advertisement, words, character, marks, or notice whatever upon any flag or ensign of the United States, or Territorial flag of this territory, or ensign evidently purporting to be either of said flags or ensigns, or who in any manner appends, annexes, or affixes to any such flag or ensign any inscription, design, device, symbol, portrait, name, advertisement, words, marks, notice or token whatever, or who displays or exhibits or causes to be displayed or exhibited, any flag or ensign, evidently purporting to be either said flags, upon which shall in any manner be put, attached, annexed, or affixed, any inscription, design, device, symbol, portrait, name, advertisement, words, marks, notice, or token whatever * * * shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding $200 or imprisonment not exceeding one year, or both."

Arizona—"It shall be unlawful for any person, persons, firm or corporation * * * to make display or exhibit for any purpose, an American flag or a pictorial representation of the same, upon which there is printed or written any word or words for advertising, political, or commercial purposes." Penalty: Fine of $5 to $100 or imprisonment for not over six months, or both.

California—It is unlawful to place on or attach to "any flag of the United States, or ensign evidently purporting to be such flag" any "inscription, picture, device, design, symbol, name, advertisement, word, letter, character, mark or notice of any kind whatsoever," or to display a flag with such things placed on or attached to it, or to place "on any manufactured or prepared article or covering of said article, such flag or indication of such

flag," or to use it as a trademark. Penalty: Fine of not over $200, or imprisonment for one year, or both.

Colorado—Essentially the same as Idaho, except that newspapers are not exempt.

Connecticut—Essentially the same as Alaska, except that the penalty is a fine of not over $100, or imprisonment not more than six months, or both; exempts newspapers as in Idaho.

Delaware—Essentially the same as Kansas.

Georgia—The State of Georgia recently has passed a statute making it unlawful to use the United States flag for advertising purposes. The new law makes it a misdemeanor "to copy, print, publish or otherwise use the flag or national emblem of the United States of America for the purpose of advertising, selling or promoting the sale of any article of merchandise whatever within this State."

Hawaii—Essentially the same as Kansas.

Idaho—Any person who in any manner, for exhibition or display, shall place or cause to be placed any word, figure, mark, picture, design, drawing, or any advertisement of any nature, upon any flag, standard, color or ensign of the United States, or State flag of this State or ensign, or shall expose or cause to be exposed to public view any such flag, standard, color or ensign, upon which shall have been printed, painted, or otherwise placed, or to which shall be attached, appended, affixed or annexed, any word, figure, mark, picture, design, or drawing, or any advertisement of any nature, or who shall expose to public view, manufacture, sell, expose for sale, give away, or have in possession for sale, or to give away, or for use for any purpose, any article, or substance, being an article of merchandise, or receptacle of merchandise, or article or thing for carrying or transporting merchandise, upon which shall have been printed, painted, attached, or otherwise placed any rep-

resentation of any such flag, standard, color, or ensign, to advertise, call attention to, decorate, mark, or distinguish the article, or substance, on which so placed * * * shall be deemed guilty of a misdemeanor and shall be punished by a fine not exceeding $100, or by imprisonment for not more than 30 days, or both, in the discretion of the court, and forfeit $50 for each offense, to be sued for by any citizen of the State for the benefit of the county treasury. "The words, flag, standard, color, or ensign, as used in this subdivision or section shall include any flag, standard, color, ensign, or any picture or representation, of either thereof, made of any substance, or represented on any substance, and of any size, evidently purporting to be, either of said flag, standard, color, or ensign of the United States of America, or a picture or representation of either thereof, upon which shall be shown the colors, the stars, and the stripes, in any number of either thereof, or by which the person seeing the same, without deliberation may believe the same to represent the flag, colors, standard, or ensign of the United States of America." Possession of forbidden articles is made presumptive evidence of guilt.

The statute does not apply to "a newspaper, periodical, book, pamphlet, circular, certificate, diploma, warrant or commission of appointment to office, ornamental picture, or article of jewelry, or stationery for use in correspondence, on any of which shall be printed, painted, or placed, said flag, disconnected from any advertisement."

Illinois—Essentially the same as Idaho, except that the penalty is a fine of $10 to $100 and costs, or imprisonment for not more than 30 days, or both, and there is no $50 penalty to be recovered by civil suit, and no exemption for newspapers. Half of any fine is to be paid to the informer, and prosecution must be begun within six months after the offense.

Indiana—Essentially the same as Kansas, except that the only penalty is a fine of $5 to $10; second offense, $10 to $25; and the exemption for newspapers is as in Oregon.

Iowa—Essentially the same as Idaho, except that there is no exemption for newspapers, and so forth.

Kansas—Essentially the same as Idaho, except that the State flag is not protected, "articles for carrying merchandise" are not mentioned, and there is no $50 penalty to be recovered by a civil action. Possession of forbidden article is not made presumptive evidence of guilt.

Louisiana—Essentially the same as Idaho, except that there is no $50 penalty to be recovered by a civil action.

Maine—"Whoever in any manner for exhibition or display, places or causes to be placed any inscription, device, advertisement or notice whatever upon any flag, standard, color or ensign of the United States or State flag of this State, or displays, or exhibits, or causes to be displayed or exhibited any flag, standard, color or ensign of the United States or flag of this State, upon which shall in any manner be placed or affixed any inscription, device, advertisement or notice whatever, or attaches to or represents upon any goods, wares or merchandise, any imitation or representation of the national flag of the United States, or uses any imitation or representation of the national flag of the United States for advertising purposes * * * shall be punished by a fine of not less than $5, nor more than $50 * * *."

Maryland—"The national flag or the coat of arms of the United States or any imitation or representation thereof, shall not be attached to, or imprinted, or represented upon any goods, wares, or merchandise, or any advertisement of the same; and no goods, wares, or merchandise, or any advertisement of the same shall be attached to the national flag or the coat of arms of

the United States, and no such advertisement shall be imprinted thereon. Any person, firm or corporation violating the terms of this section shall be deemed guilty of a misdemeanor, and upon conviction * * * shall be fined not more than $100 or imprisoned for no more than 12 months, or both; and in the event that the violation shall be by a corporation, the penalty shall be inflicted upon the president or other chief officer thereof."

Massachusetts—"Whoever * * * displays such flag or any representation thereof upon which are words, figures, advertisements or designs, or who shall in this commonwealth expose to public view, manufacture, sell, expose for sale, give away or have in possession for sale, or to give away, or for use for any purpose, any article or substance, being an article of merchandise or a receptacle of merchandise or articles upon which shall be attached through a wrapping or otherwise engraved or printed in any manner, a representation of the United States flag, shall be punished by fine of not less than $10 nor more than $100 * * *. Words, figures, advertisements or designs, attached to or directly or indirectly connected with the flag or any representation thereof in such manner that the flag or its representation is used to attract attention to or advertise such words, figures, advertisements or designs, shall for the purposes of this act be deemed to be upon the flag. This has been amended to exempt patriotic publications."

Michigan—Essentially the same as Kansas, except that the manufacture, and so forth, of goods marked with a flag is not included, the penalty is a fine of $5 to $25, or 30 days imprisonment or both, and the newspaper exemption is as in Oregon.

Minnesota—"Every person who, for exhibition or display shall cause to be placed upon, or affixed to any flag, standard, color or ensign of the United States or

this State, or upon one purporting to be either of said flags, standards, colors, or ensigns, any inscription, design, device, symbol, name, advertisement, words, characters, marks, or notice, whatever; or who shall display or exhibit any such flag, standard, color, or ensign, having upon or affixed to it any such inscription, design, device, symbol, name, advertisement, words, characters, marks, or notice whatever * * * shall be guilty of a misdemeanor * * *." The penalty in Minnesota for a misdemeanor not otherwise punishable is imprisonment in the county jail for not more than three months, or a fine of not more than $100.

Mississippi—Essentially the same as in Idaho, except that the Confederate flag is protected also; there is no exemption for newspapers, and possession of forbidden articles is not made presumptive evidence of guilt.

Missouri—Essentially the same as in Kansas.

Montana—Essentially the same as in Kansas.

Nebraska—Essentially the same as in Idaho, except that there is no $50 penalty to be recovered by a civil action.

Nevada—The offense is defined as in Alaska. Violation is a misdemeanor. The penalty for a misdemeanor not otherwise punishable is imprisonment in the county jail for not more than six months, or a fine of not more than $500, or both.

New Hampshire—Essentially the same as in Idaho, except that the flags of all States are protected, possession of forbidden articles is not made presumptive evidence of guilt; the only penalty is a fine of not over $100, or imprisonment not over three years, or both, and there is no exemption for newspapers.

New Jersey—Essentially the same as in Alaska. Exemption of newspapers, and so forth, and definition of "flag" as in Idaho. Violation is a misdemeanor. The penalty for a misdemeanor not otherwise punishable is a

fine of not over $1,000, or imprisonment not over three years, or both.

New York—Essentially the same as in Idaho, except that there is no exemption for newspapers, and so forth. Possession of forbidden articles is made presumptive evidence of guilt.

North Dakota—Essentially the same as in Indiana, except that the penalty is a fine of $5 to $25, or 30 days imprisonment, or both.

Ohio—"Whoever prints, paints or places a word, figure, mark, picture or design, upon a flag, standard, color or ensign of the United States, or the State of Ohio, or causes it to be done, or exposes, or caused to be exposed, such flag, standard, color or ensign upon which is printed, painted, or placed, or to which is attached or appended a word, figure, mark, picture or design, or manufactures or has in possession an article of merchandise upon which is placed or attached a representation of such flag, standard, color, or ensign * * * shall be fined not more than $100, or imprisoned not more than 30 days, or both."

The word "flag" is defined substantially as in Idaho, except that the State flag is included in the definition. Exemption for newspapers, and so forth, as in Idaho.

Oregon—Essentially the same as in Indiana, except that the penalty is a fine of $20 to $100, and the exemption is for a "regular issue of a newspaper or other periodical" with "flag disconnected from any advertisement."

Pennsylvania—The offense is defined about as in Idaho, except that "articles for carrying merchandise" are not mentioned, and the act applies to merchandise marked with a flag "for the purpose of sale, barter, or trade."

"The words flag, standard, color, or ensign, as used in this act, shall include any flag, standard, color, en-

sign or any picture or representation of either thereof, made of any substance or represented on any substance, and of any size, evidently purporting to be either of said flag, standard, color, or ensign of the United States of America or of this State, or picture or a representation of either thereof, upon which shall be shown the colors, or any color, or any combination of colors of either the stars or the stripes, or the stars and the stripes in any number of either thereof, or anything which the person seeing the same, without deliberation, may believe the same to represent the flag, colors, standard, or ensign of the United States, or of this State." Violation is a felony. Penalty: A fine not exceeding $500, or imprisonment for not more than six months, or both. Exemption for newspapers, and so forth, about as in Idaho.

Porto Rico—Essentially the same as in Kansas.

Rhode Island—Essentially the same as in Kansas.

South Carolina—This statute contains the word "knowingly," does not protect the State flag, and gives no exemption for newspapers, otherwise it is essentially the same as in Idaho.

South Dakota—"Any person who * * * shall wilfully mutilate, deface, alter or falsify the surface of the United States flag by fixing or causing to be affixed thereon any label, stamp, advertisement, brand, imprint, portrait, printed or painted, any emblem, mottoes, or design * * * and shall expose the same to public view in any public place, shall be deemed guilty of a misdemeanor * * *." Penalty: A fine not exceeding $100, or imprisonment not exceeding 30 days, or both.

Utah—Essentially the same as in Kansas.

Vermont—"Use of national flag or coat of arms." "Any person who attaches to or imprints or represents upon goods, wares, or merchandise, or an advertisement

of the same, the national flag or the coat of arms of the United States, or an imitation or representation of the same, or attaches to or imprints upon such flag or coat of arms, goods, wares or merchandise, or an advertisement of the same, shall be fined not more than $100 nor less than $10 * * *."

Virginia—Essentially the same as in Kansas.

Washington—Essentially the same as in Minnesota, except that the penalty in Washington for a misdemeanor not otherwise punishable is imprisonment for not more than 90 days or a fine of not more than $250.

West Virginia—The offense; the exemption for newspapers, and so forth; and the definition of the word "flag" are about the same as in Idaho. Penalty: A fine of $5 to $100 and, in the discretion of the court, imprisonment for not more than 30 days.

Wisconsin—Essentially the same as in Indiana, except that the penalty is a fine of $10 to $100 and costs, and in default of payment, imprisonment for not more than 30 days.

Wyoming—Essentially the same as in Alaska, except that the penalty is a fine not exceeding $250, or imprisonment not exceeding one year, or both.

THE toil, the intelligence, the energy, the foresight, the self-sacrifice, and devotion of the farmers of America will, I believe, bring to a triumphant conclusion this great war for the emancipation of men from the control of arbitrary government and the selfishness of class legislation and control, and then, when the end has come, we may look each other in the face and be glad that we are Americans and have had the privilege to play such a part.

WOODROW WILSON

CHAPTER XXVII

HOW TO SELL TO THE GOVERNMENT

By W. J. AVERY
of the Editorial Staff of the A. W. Shaw Company

This is a time when our government needs the cooperation of every seller whose product is used for military purposes—and it is said practically every product for civil life is equally necessary to the complete upkeep of the military establishment. But in the past many sellers have been unfamiliar with the routine of selling to our army and navy —neither knew where nor when to offer their goods. This chapter is intended to help supply that sort of information.

FIND out just what the government wants before attempting to sell to it.

This statement applies with equal force whether the material you can supply is a few hundred pairs of canvas gloves or a million rifles—no matter whether you are a millionaire manufacturer or a country merchant. Of course, the prospective seller should be able to furnish a reasonable amount of any supplies or materials required by the government.

In the past, selling to the government assumed to the average man somewhat the proportions of a specialized business. The thought of getting a government contract conjured up a specter of red tape, an unnecessary labyrinth of regulation, which could be passed only by "those in the know."

That conception nowadays is a mistaken one. If goods and prices are right no man need be afraid that his proposal will not receive consideration at the hands

of the quartermaster's and ordnance departments—the branches of the government which do the main purchasing of supplies for our land fighting men.*

In selling to the Navy, the procedure is fairly simple, as the Navy Bureau of Supplies and Accounts, which does the purchasing, issues a sheet once a week in the form of a "Notice of Proposed Purchases." This tells of practically all of the Navy requirements that have come up during the past week. Each item is given a schedule number. The prospective seller need only mention the numbers of the items in which he is interested, on a postal card to the Bureau, and the government will send complete specifications and a contract blank. This weekly circular usually covers practically all of the Navy's needs, and any manufacturer can be put on the mailing list at his request.

Right here it may be interesting to digress somewhat, and tell why the Navy is considered easy to deal with if the seller can give value received.

Almost everyone who has had anything to do with the Navy's purchasing—including at least one official investigation committee—is pretty thoroughly satisfied that Rear Admiral Samuel McGowan is the one big reason why it is so effectively conducted. McGowan, besides ranking as a rear admiral, is the paymaster-general of the Navy and chief of the Bureau of Supplies and Accounts. Perhaps it would be more accurate to call him the business manager of the Navy. His staff does all the buying and paying at any rate.

McGowan certainly has saved the United States many hundreds of thousands of dollars by means of one buying plan. In 1916 he directed his statisticians to get to work and jot down the figures on food costs—and the

*Bids may be withdrawn any time before the dates on which they are to be opened. This helps bidders in meeting changes in prices of raw materials. The period between the publication of notice for proposals and the opening of bids is usually seven days for small purchases or contracts and 30 days for larger ones.

cost of various other articles—as far back as 1910. When these figures were ready, he had charts made, one for each article, on which the price for every day of the year was traced out. By a glance at these charts one sees that nearly every article of a seasonal nature reaches its lowest price at about the same time each year. In consequence of this little stack of charts McGowan usually can buy with the assurance that he is getting the lowest price of the year. He studies current conditions and checks them up with conditions in years past.

It is doubtful if any business office in the country is able to handle so much work as McGowan's does without a much larger force. His bureau is declared to be the most efficient in the entire government. Julius Rosenwald, a member of the Advisory Commission of the Council of National Defense, believes that McGowan has worked out one of the most wonderful office systems to be found anywhere.

McGowan believes that nothing is too good for the Navy, and while reputable sellers can readily be put on the Navy's mailing list, it's mighty hard for the "shyster" variety to do business with him. The form reproduced on page 276 must be filled out and the prospective seller approved by McGowan's men before his name goes on the mailing list. Other forms used by the Navy in handling purchases are shown on pages 278, 279, 282. He has enlisted the aid of the Chamber of Commerce of the United States of America in looking up the capabilities of all who want to sell to the Navy, and in making it possible for concerns the country over to help the Navy, and so it is practically impossible for a poorly equipped firm to deal with the Navy, but, on the other hand, the right concern, wherever it is located, has the best chance that is justified by its facilities. Wherever and whenever possible McGowan prefers to do business direct with the actual producers.

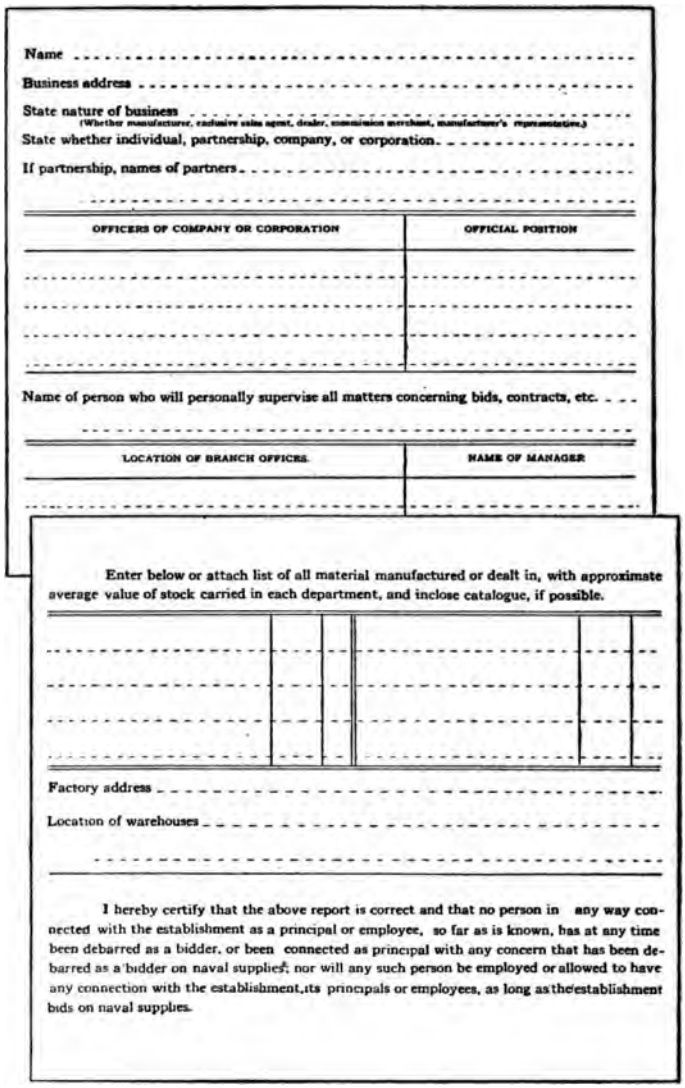
The procedure in selling to the army is more difficult. Army supplies are purchased by the various quartermasters' departments, by the ordnance department, and by a few other departments. The quartermasters' departments and the ordnance departments do the bulk of the purchasing. These departments do not, however, issue any notice of proposed purchases, as does the Navy. The prospective seller should write to each of the quartermasters' departments and also each of the ordnance establishments, stating the lines offered and asking to be notified whenever such lines are needed. He should also write to the Advisory Commission of the Council of National Defense, stating his facilities. Whenever the war or navy department has trouble in obtaining goods, it gets in touch with this Advisory Commission and is referred to the proper manufacturers or producers.

Supplies for our army are listed under four divisions, which are:

1. Subsistence
2. Clothing
3. Equipage
4. Ordnance

The summary of procedure for obtaining government work usually is:

1. Write to the Navy Department, Bureau of Supplies and Accounts, requesting to be put on the mailing list for its weekly "Notice of Proposed Purchases."
2. Write to all of the Quartermasters' Departments of the Army, asking permission to bid.
3. Write to all of the ordnance establishments and ask permission to bid.
4. Write to the Advisory Commission of the Council of National Defense, Munsey Building, Washington, stating what your facilities are and what materials you are able to turn out.



Name .....

Business address .....

State nature of business .....
(Whether manufacturer, exclusive sales agent, dealer, commission merchant, manufacturer's representative.)

State whether individual, partnership, company, or corporation .....

If partnership, names of partners .....

OFFICERS OF COMPANY OR CORPORATION	OFFICIAL POSITION

Name of person who will personally supervise all matters concerning bids, contracts, etc. . . .

LOCATION OF BRANCH OFFICES	NAME OF MANAGER

Enter below or attach list of all material manufactured or dealt in, with approximate average value of stock carried in each department, and inclose catalogue, if possible.

Factory address .....

Location of warehouses .....

I hereby certify that the above report is correct and that no person in any way connected with the establishment as a principal or employee, so far as is known, has at any time been debarred as a bidder, or been connected as principal with any concern that has been debarred as a bidder on naval supplies; nor will any such person be employed or allowed to have any connection with the establishment, its principals or employees, as long as the establishment bids on naval supplies.

On 5 x 8 cards like the one reproduced prospective sellers to the Navy must furnish Rear Admiral McGowan information about their capabilities. And he checks the information with that possessed by varions officials, commercial organizations, and other sources.

If possible, the prospective seller also should get into personal touch with the officers at the quartermaster's depot or ordnance establishment nearest him. (A list of these depots and establishments is given on pages 285, 286.) Officers of these depots will be glad to give information as to just what the government wants, look over samples of goods offered, and make recommendations as to changes, where necessary, to fit federal specifications.

Whether or not a personal visit to the quartermaster's depot is made, the prospective seller should make a written request that his name be placed upon the quartermaster's mailing list, in order that he may be informed when supplies are needed which he may be in a position to furnish. It is well to incorporate in this letter as exact a description as possible of the supplies which can be furnished. The applicant will then receive all advertisements and proposals for bids, together with exact specifications, of supplies required in this line.

Care should be taken to follow exactly the conditions which the government has laid down covering the purchase of supplies. These conditions are furnished prospective sellers in every case, but there has been much complaint from quartermasters that, apparently, bidders paid little or no attention to them.

Some government offices are reported to have been inconvenienced by sealed bids that did not state on the envelop just what material the bid was on, and the date at which it should be opened. However, at least one government purchasing office has a plan for handling bids that bear no distinguishing marks regarding the date of opening or schedule number to ascertain the date of opening. Under this plan the only chance for difficulty lies in the receipt of an unmarked envelop after the bids it refers to are opened and are to be awarded before the next opening of bids—of course a rare occurrence.

U. S. A.—Form 400. SEND THIS PROPOSAL PROPERLY EXECUTED TO

FORM A.

NAVY DEPARTMENT,
BUREAU OF SUPPLIES AND ACCOUNTS,
WASHINGTON, D. C.

ORIGINAL DUPLICATE. [Write which is wanted.]

To be opened at 10 o'clock a. m., ..., 19
(Insert only one date of opening.)

Do not paste the schedules into either copy of Form A, but use this Form as a cover.

See instructions on page 4 hereof for method of preparing bid. Bids not submitted in accord with the instructions or received late will NOT be considered.

Form A, IN DUPLICATE, properly executed in accordance with the instructions, is a necessary part of a bid. The following portion of the form down to the guarantee constitutes the formal tender or offer to furnish supplies.

....., 19

Referring to the invitation for proposals by the Paymaster General of the Navy, I (or we) do hereby propose to furnish and deliver, as specified, the classes of articles upon which prices have been quoted included in the several schedules incorporated herein and forming a part of this proposal, to wit: No. ....., No. .....,
No. ....., No. ....., No. ....., No. ....., No. ....., No. ....., No. .....,
No. ....., No. ....., No. ....., No. ....., conforming in all respects to the requirements
(Insert numbers of all schedules bid on.)
of the schedule and specifications herein, and at the prices set opposite each item, respectively, subject to the usual inspection, to the U. S. Revised Statutes, to the "CONDITIONS," the "DELIVERIES," and the "INSTRUCTIONS," printed on the second, third, and fourth pages of this proposal.

Witness to signature

.....
(Full name of bidder.)

By ..... (Its name.)

.....
(Post office address in full.)

GUARANTEE ON THIS PROPOSAL.

Instructions regarding the guarantee will be found on page 4 of this form.

The undersigned, ...
(Name of guarantor.)

of ....
(Post office, street, and number.)

in the State of ..... and .....
(Name of guarantor.)

..... of .....
(Post office, street, and number.)

....., in the State of ....., hereby guarantee that

in case the foregoing proposal of .....
(Name of bidder.)

....., for furnishing classes bid on in the accompanying schedules, be accepted

for any one or more or all of the classes offered, ... will, within ten days after the receipt of notice of such
(He, it, or they.)

acceptance, execute the required contract for the same and give bond, with good and sufficient surety, and in case the said bidder shall fail to enter into such contract and furnish said bond, as aforesaid, we guarantee to make good the difference between the offer of the said bidder and that which may be accepted.

.....[SEAL.]
Guarantor

Witness .....

.....[SEAL.]
Guarantor.

CERTIFICATE REGARDING GUARANTORS.

....., 19

I HEREBY CERTIFY that .....
(Name of guarantor.)

and ..... are known to me to be men of property,
(Name of guarantor.)

and able to make good their guarantee.

[SEAL.] .....
(Must be signed by a United States officer, notary public, president, vice president, or cashier of a national bank.)

If an annual guarantee is on file, write the words "Annual guarantee on file" on the blank line below. If a certified check is furnished, attach it hereto and write the words "Certified check attached" on the blank line below.

.....

NOTE.—Proposals submitted by a firm must be duly signed in the firm name by a member of the firm. Proposals submitted by a corporation must be signed with the corporate name, by an officer thereof, with title of his office, and sealed with the corporate seal. If signed by any other person not an officer, evidence of authority shall be appended, unless already on file. Persons signing proposals as "agent" shall also file evidence of authority to do so unless already on file, same to be attached to the second page of this proposal.

A notarial seal or other evidence of authority must in all cases be affixed to the guarantor's certificate regarding guarantees.

Form "A" of the Navy's purchasing system must accompany the bid. It amounts practically to a guarantee to stand back of the bid, and on the three other pages—the first page only is reproduced—are stated the conditions of the contract.

Bid for supplies for the U. S. Navy, to be opened at 10 a. m.

JANUARY 15, 1918.

Schedule 1640.

(CONSTRUCTION AND REPAIR.)

ORIGINAL. / DUPLICATE. } Indicate which by erasure.

VALVES.

Send this proposal, accompanied by Form A, properly executed, both in DUPLICATE,

TO THE

BUREAU OF SUPPLIES AND ACCOUNTS,

Navy Department, Washington, D. C.

BID OF

Full name of bidder. Address.

GENERAL CONDITIONS GOVERNING ALL CLASSES OF THIS SCHEDULE.

Liquidated damages for delayed delivery provided by Form A will not apply to this bid or any contract based on this schedule.

Further information desired may be obtained upon application to the construction officer, navy yard, Boston, Mass.

Inspection is to be made at place of manufacture unless otherwise directed by the Bureau of Construction and Repair.

Bidders must state on the blank lines under each item the name and address of the manufacturer of the material it is proposed to furnish. If the material will be supplied from stock and not specially manufactured, the exact location where the finished material is in stock must be stated.

When the bidder and the manufacturer are the same, the exact address of the manufacturing establishment should be given and not the office address.

All handling of material necessary for purposes of inspection shall be performed and all test specimens necessary for the determination of the qualities of materials used shall be prepared and tested at the expense of the contractor.

If inspection is authorized at the place of manufacture, shipment made without authority from the Government inspector may result in return, at the contractor's expense, of material to place of manufacture for inspection.

If contract is exhibit, the contractor and subcontractor shall furnish the inspector representing the bureau concerned in their district quadruplicate copies of all orders placed with the manufacturer for materials, stating, when possible, the purpose of such item ordered and the specifications for the same. Such orders shall state explicitly what treatment, if any, other than machining, is to be given the material after leaving the manufacturer's works. In all cases these orders shall contain the number of the original contract of which these constitute suborders.

In connection with the inspection of the material, if incorrect information is given, thereby causing one or more useless trips by the inspector, the Government reserves the right to charge the expense of such useless trips to the contractor, and further inspection at the mills may be denied the contractor, at the option of the Government.

Unless specifically stated to the contrary, the Government assumes that the bidder has the necessary equipment for performing the work required in case he should be awarded the contract. Unless special needs are stated by the bidder at the time of submitting his proposal, the Government will not attempt to secure earlier delivery of machine tools or other equipment that the bidder may have ordered or may find necessary to purchase for the prosecution of the work under his contract than may be engaged for by the bidder himself.

No. of Item.	ARTICLES.	Unit Price.		Total.	
		Dollars.	Cents.	Dollars.	Cents.
	Class 2.—(*Req's 512, U. S. A., Naval Supply Account, C and R.—Boston, Mass.—Sch. 1640.*)				
	To be delivered at the navy yard BOSTON (Charlestown), MASS., not later than Apr. 1, 1918. If unable to make delivery within the time specified, state the actual time required. Alternate bids with a greater time of delivery may be submitted and will be considered, but the right is reserved to make award on time stated above.				
	Stock classification No. 45.				
	For U. S. S. *Brutus:*				
	Valves, gate, flanged, as follows:				
1	2 valves, 24-inch, flanges 31 inches diameter by 1⅞ inches thick, face 15 inches, Nos. OV 58, 60, 62.....each				
2	11 valves, 12-inch, flanges 19 inches diameter by 1⅛ inches thick, Nos. OV 63, 64, 65, 66, 73, 74, 75, 76, 77, 78, 79.....each				
3	2 valves, 12-inch, flanges, inlet, 20 inches diameter by 1⅛ inches thick, Nos. OV 67, 68; flanges, outlet, 19 inches diameter by 1⅛ inches thick.....each				
4	2 valves, 10-inch, flanges 16 inches diameter by ⅞ inches thick, Nos. OV 82, 94.....each				
5	18 valves, 6-inch, flanges, inlet, 17 inches diameter by 1 inch thick, Nos. OV 80, 81, 91, 92, 93, 95, 100, 103, 106, 109, 110, 111, 112, 114, 115; flanges, outlet, 13½ inches diameter by 1 inch thick.....each				
6	1 valve, 6-inch, flanges 11 inches diameter by 1 inch thick, No. WV 2.....each				
	Carried forward.....				

Here is shown the first page of the bid form used by the Navy. The forms used by Rear Admiral McGowan's department are many, but it must be admitted that they are effective. This form must accompany Form "A" shown on the opposite page.

The following general conditions govern the purchasing of commodities purchased upon "contract":

1. Proposals are invited from responsible bidders, no matter where located.

Proposals received prior to the time of opening will be securely kept. The officer whose duty it is to open them will decide when that time has arrived. No proposal received thereafter will be considered, except that when a proposal arrives by mail after the time fixed for the opening, but before the award is made, and it is clearly shown that the non-arrival on time was due solely to delay in the mails for which the bidder was not responsible, such proposal will be received and considered with the rest.

Proposals must be made in duplicate or triplicate, if so stated in advertisement, upon printed forms, which can be obtained by application to the officer issuing the advertisement in question.

Envelops containing proposals must be marked "Proposals for ———— to be opened ———— o'clock, ————191—," and addressed to the officer who advertises for proposals, or to an officer authorized to receive them by the terms of the advertisement that was made.

2. Bidders are required, in almost every case, to furnish samples of supplies they propose to furnish.

3. Substitutions of materials or supplies may be made, if, in the judgment of the quartermaster, an equal or equivalent is supplied.

4. Sometimes bids must be accompanied by a certified check or guarantee for an amount specified in the advertisement for bids.

5. If public interest demands, the form of proposal provides that the quantities on schedule may be decreased by 20% or increased by 50%.

Above is shown the new government motor truck—the "Liberty" motor truck. Many of these machines already are being used by the government to overcome freight congestion.

You would scarcely believe this—unless you saw it. The motor truck was pressed into service to "spot" these huge boilers for a city plant, when a shortage of railway engines developed.

BOND.

Know all men by these presents, That we, ..., as principals, and ....., and ....., as sureties, all of ....., are held and firmly bound, etc., unto the Secretary of the Navy in the penal sum of ..... dollars, to be paid to the Secretary of the Navy, or his successors; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this ..... day of ....., A. D. 19

CONDITIONS.

The conditions of the above bond are such, that if the said above-bounden ....., their heirs, executors, or assigns, shall well and truly, and in a satisfactory manner, fulfill the contract hereto annexed, and deliver the articles or perform the services mentioned in the annexed schedule within the time specified, and to the satisfaction of the said Chief of the Bureau of Supplies and Accounts, then this obligation to be void and of no effect; otherwise to remain in full force and virtue.

SIGNED AND SEALED IN THE PRESENCE OF—

..... [SEAL.]
(Principal signs here.)

..... [SEAL.]

..... [SEAL.]
(Surety signs here.)

..... [SEAL.]
(Surety signs here.)

JUSTIFICATION OF THE SURETIES.

(Must be sworn to before a notary public or other officer authorized to administer oaths.)

STATE OF .....
COUNTY OF ..... } ss:

I, ..., one of the sureties named in the within bond, do swear that I am pecuniarily worth the sum of ..... dollars, over and above all my debts and liabilities; that I am not a copartner of the said ..... and that I have no contract at this time with the Bureau of Supplies and Accounts.

....., Surety.

Subscribed and sworn to before me this ..... day of ....., A. D. 19

.....

STATE OF .....
COUNTY OF ..... } ss:

I, ..., one of the sureties named in the within bond, do swear that I am pecuniarily worth the sum of ..... dollars, over and above all my debts and liabilities; that I am not a copartner of the said ..... and that I have no contract at this time with the Bureau of Supplies and Accounts.

....., Surety.

Subscribed and sworn to before me this ..... day of ....., A. D. 19

.....

CERTIFICATE.

(Must be signed by a United States officer in all cases where individuals are named as bondsmen. Unnecessary if corporate security bond is furnished.)

I, ..., do hereby certify that ..... and ....., the sureties above named, are personally known to me, and that, to the best of my knowledge and belief, each is pecuniarily worth, over and above all his debts and liabilities, the sum stated in the accompanying affidavit subscribed by him.

.....

The Navy protects itself against non-fulfilment of a contract as a successful corporation does—better than some. Here is shown the bond form, made a part of the contract, which must be executed by all sellers to our "first line of defense."

6. Proposals for the whole or a reasonable part of any item are considered.

7. Bond for the successful carrying out of contract, where large, is usually required.

8. All supplies furnished will be subjected, whenever practicable, to the personal inspection of a commissioned officer at the time of delivery; otherwise, such inspection will be made by civilian inspectors under the personal instruction of the purchasing officer, subject to test at irregular intervals and at unexpected times by such officer. Goods not up to the standard stipulated will be rejected.

9. Unless otherwise specified in the advertisement, supplies must be delivered free of all extra charges at the time or times designated by the purchasing officer at such warehouses, wharves, depots, or other places designated by such officer at the post or station or within the city or city lighterage limits where the advertisement may be issued.

10. Ordinarily, supplies will be purchased where they can be purchased the cheapest, quality and cost of transportation and the interests of the government considered at all times, of course.

There are two other kinds of purchases made, besides commodities purchased on "contract," which are also important. One of these is by "written proposal and written acceptance." Such purchases are for amounts under $500, and where the delivery immediately follows an award or bargain. In these instances, the steps described above are waived, and the purchases effected simply by a written proposal, and a written acceptance, both in the form of a letter. No other documents, bids, or contracts are required. This, of course, makes the routine of selling strikingly simple and easy to handle.

The other important type of purchase is "an open market purchase," which is made without any advertising or competitive bidding and is authorized in certain special cases, as for example:

1. In an emergency when there is not sufficient time to advertise or solicit bids.
2. When it is impracticable to secure competition.
3. When proposals have been solicited but none have been received.
4. When proposals are above the market price. As a matter of fact, under this "*emergency*" clause, many purchases are now being made upon this basis, upon the ground that there is not sufficient time to allow 30 days to intervene before closing the deal.

Furthermore, while the above were the three forms of agreement in use prior to the war, and while they are all still in use, a new one has been introduced, namely, the "cost plus." Because of the unwillingness of many producers to bind themselves by a contract, in these times of fluctuating prices and uncertain conditions, particularly when the contract must be accompanied by a bond or certified check, the government has at times introduced the "cost plus" plan. This guarantees to cover all the producer's or contractor's cost of production plus a certain profit to be added to the sale, generally 10%. Under this scheme, the costs of production are verified by government accountants. This form of agreement has been used for securing various kinds of commodities.

Selling methods cut no figure in the awarding of a government contract. An office boy can present a bid (though he'd lack sufficient responsibility to make good, of course) just as well as a $100,000 company. No favorites are played; the quality and prices are the only points considered and the purchasing officers are experts.

The inspection given all articles purchased by the government cannot be evaded. When it is considered that food or equipment not up to specification may mean the lives of many soldiers, the reason for the rigorousness of this inspection is obvious. A deliberate attempt to evade inspection is immediately punishable by cancelation of the entire contract.

Non-directness in selling is in little favor with the quartermaster's department. It insists on dealing direct, and every effective producer does a service for his country by getting in touch with this department.

Navy Purchasing Offices are located at Newport, R. I.; Baltimore (custom house), Md.; San Francisco, Cal.; Seattle, Wash.; and the Supply Officers stationed at the Navy Yards, Washington, D. C.; Portsmouth, N. H.; Brooklyn, N. Y.; Boston, Mass.; Philadelphia, Pa.; Charleston, S. C.; Norfolk (Portsmouth), Va.; and the Naval Stations, New Orleans, La.; Key West, Fla.; Naval Aeronautic Station, Pensacola. Fla.; and the Naval Training Station, Great Lakes, Illinois.

Following is a list of the quartermasters' depots. In writing, address the Depot Quartermaster of each station, telling what you are in a position to supply, stating the quantity, and asking to be notified whenever anything in your line is required.

MISCELLANEOUS SUPPLIES. These depots purchase practically everything:

Army Building, 39 Whitehall Street, New York City;
26th and Grays Ferry Road, Philadelphia, Pa;
Jeffersonville, Indiana;
2d and Arsenal Sts., St. Louis, Mo.;
3615 Iron Street, Chicago;
Army Building, Omaha, Nebr.;
Fort Mason, San Francisco, Cal.;
305 Arcade Annex, Seattle, Wash.;
17th and F Sts., N. W., Washington, D. C.;

Third and Oak Sts., Portland, Ore.;
Atlanta, Ga.

SUBSISTENCE STORES. These depots purchase food only:
Jayne Building, 1020 Washington St., Boston, Mass.;
Army Building, Whitehall St., New York City;
Arsenal St., St. Louis, Mo.;
Army Building, Omaha, Nebr.;
Fort Mason, San Francisco, Cal.;
305 Arcade Annex, Seattle, Wash.;
Atlanta, Georgia;
Los Angeles, Cal.;
Gumbel Building, Kansas City, Mo.;
Third and Oak Sts., Portland, Ore.;
Central Building, New Orleans, La.;
Southern, Fort Sam Houston, Texas.

Below is a list of the various ordnance establishments. To have your names placed on lists for proposals to furnish supplies, address "The Commanding Officer."

AUGUSTA ARSENAL, Augusta, Cal.;

BENICIA ARSENAL, Benicia, Cal. (express and freight address: care depot quartermaster, New York City);

FRANKFORT ARSENAL, Philadelphia, Pa. (telegraph address: Frankfort Arsenal, Philadelphia, Pa.; post office address: Bridesburg Station, Philadelphia, Pa.; express and freight address: Bridesburg, Pa.);

MANILA ORDNANCE DEPOT, Manila, P. I. (express and freight address: care depot quartermaster, New York City, Pier 6, Bush Terminal, Brooklyn, N. Y.);

NEW YORK ARSENAL, Governor's Island, New York Harbor, (freight address: care depot quartermaster, New York City);

PICATINNY ARSENAL, Dover, N. J. (freight address: Picatinny Arsenal, Picatinny, N. J.);

ROCK ISLAND ARSENAL, Rock Island, Ill.;

SAN ANTONIO ARSENAL, San Antonio, Tex.;

SANDY HOOK PROVING GROUND, Fort Hancock, N. J. (telegraph address: Sandy Hook, N. J.; post address: Fort Hancock, N. J.);

SPRINGFIELD ARMORY, Springfield, Mass.;

WATERTOWN ARSENAL, Watertown, Mass. (express address: Faneuil, Mass.; freight address: Union Market, Mass.);

WATERVLIET ARSENAL, Watervliet, N. Y. (express address: Troy, N. Y.; freight address: Green Island, N. Y.).

CHAPTER XXVIII

MORE PRODUCTION WITH FEWER MEN

By W. R. BASSET
of Miller, Franklin, Basset and Company

Release men and money for the front: that is the call—and surely one of the first steps to take in making a business "do its all" is to get more output from the payroll. Methods by which 13 concerns actually attained greater production with fewer employees are described in this chapter. The potential value of methods such as these may be intensified to a high degree if the war lasts long enough to render still more acute the labor shortage which already threatens America. But no matter what condition the war leads into, every business man can get pointers here that are equally useful in peace or war times. It was the experience of British employers, when the stress of war-time work was felt, that many times the remedy for the apparent overload was not a desperate search for industrial recruits, but rather getting the most out of the men already at work. This, in many cases, was accomplished with little trouble once the employer studied the conditions of actual work—sometimes even a slight change in the position or height of a machine cut the fatigue of its attendant in half—and surely the English side of the Atlantic can have no monopoly of better production methods!

EIGHT men were employed by a good-sized rolling mill for the sole purpose of repairing the leaks in the water pipes which form so vital a part of cold rolling. There were several miles of the piping and always a leak was breaking out somewhere. The eight men rushed here and there, working very hard indeed, but they could not keep ahead of the leaks. Some part of the plant was usually handicapped by lack of water—how much that concern lost during the course of the year through shutdowns, I do not know, but certainly the amount was considerable.

I discovered that, although these repair men were on the jump from whistle to whistle, they put in more than half their time examining leaks and fetching pipe and tools—that is their wages were equally divided between foot work and repair work. We cut down the squad to three men; one man traveled from morning to night over the pipe lines; sometimes he made two rounds and sometimes he made three during the day. With him he carried a supply of tape and; whenever he discovered a leak, he bound it up with tape as a temporary repair. The other two men were provided with a truck which contained pipe and tools; they pursued a fixed daily route watching for bandaged pipe. When they came to such a signal, they at once made the permanent repair and they did it quickly because they had everything for the job with them. By this simple planning, three men were thus able to do the work that had not been nearly so well done before by eight men in the same time!

Industry is going to be short of men. Is it possible for one man to do the work of two or three without the introduction of expensive machinery? Or without overworking the man? Speeding up production and reducing the labor force at the same time is more often a question of planning ahead rather than of putting pressure on the force. Take an instance from a large textile mill, which follows:

Certain grades of wool, during the winter, reached the factory frozen. The big bales, already compressed with enormous force, presented all the adaptability of a block of granite. Five men slashing with axes, seldom made ready more than 17 bales during a 10-hour day. The men received $2 a day. No one happened to think that the bales might be attacked with other than brute force until it was suggested that the

wool be thawed out with steam. A single man equipped with a short nozzle hose, connected with a live steam main, managed to prepare more bales for the pickers in a day than had the whole five with their lusty axes. Thus a bit of hose saved that company the wages of four men or $2,400 a year.

JUST THREE STEPS PLANNED RIGHT AND THE LABOR OF 16 MEN SAVED

Here is a case where the planning of three steps saved the hire of 16 men! Eight gangs of six men each were handling metal under heat; each operation took exactly four minutes. We found that one man worked very hard for 1½ minutes under terrific heat, another worked for the same length of time under almost the same conditions, and the remaining four men put in exactly a minute together in a final lift. The work required no particular skill but it was very wearing on the two men who had to bear the full force of the heat. We arranged that the men should alternate in taking the positions of strain so that none would become unduly fatigued; that enabled them to assist in the final operation and thus, to cut down the squad from six to four men. Instead of two men working very hard and requiring rest periods and four men working lightly, the four men evenly shared the burden and none was either over- or underworked. By each man taking three steps after an operation, the proper rotation was attained after a little training—the shift was something like that used in many football formations. In order to keep up the interest in the new scheme, a bonus was given, with the result that the four-men squads averaged about 30% more work than the old six-men squads. These three steps saved that company the tidy sum of $34,560 a year on wages alone without counting the raising of production.

Sometimes an almost ridiculously simple rearrangement of machinery will cut the labor item in half. In the following case, we had 10 men running 20 machines whereas 24 men had previously been able to manage only 16 machines. The job was to cut wooden sticks into blocks about 10 inches long and then turn them in a lathe. At first the saw tables were placed at one end of the room and the lathes at the other—a saw to each lathe. One man operated the saw, another the lathe and a third carried the blocks from the saw to the lathe. Then the trucking was seen to be unnecessary and the lathes were moved up to the saws so that the blocks could be taken directly from the saw table by the operator; that got rid of one man and was supposed to be the height of efficiency for it saved $4,800 a year in wages on the eight sets of machines. But we made some further study with the result that we put an automatic knockout on the lathe which enabled one man to feed both the saw and the lathe—cutting the labor bill exactly in half; we hung up a bonus for a certain output and within a short time, the one man operating two machines was turning out more per day than had the two men previously. Doing the logical, but so often overlooked thing, here saved this company two thirds of its labor cost and materially increased its production. And yet turning out more material with less labor is supposed to be the gravest of undertakings by many managers!

The more I study industry, the more I am convinced that the average employer pays more to his men for their walking than for their working time. How many small stores have their stocks arranged with a thought to attaining the minimum distance between goods and clerk? I have seen many shops where three clerks struggle to serve customers that could have been better attended by one clerk if only the stock, the cash register,

Salesmen in this store do not have to run back and forth to the shipping room. The overhead carrier system makes it possible to do the work with fewer hands: a worth-while plan you'll admit, at a time when men are needed for service.

This is another view of the overhead system which cuts labor costs in one store. Packages placed on the belt go directly to the shipping room for delivery. Plans like this release men who are badly needed for war work.

and wrapping paper had been placed in studied sequence.

Putting employees on a piece-rate basis is one of the best known ways of increasing production with what you already have—it is superior to a bonus or premium —provided the rate has been scientifically fixed. Most piece rates are set somewhat after this fashion:

Superintendent: "Can't you put that gang on a piece rate?"

Foreman: "Sure. They've been at that kind of work over a month now."

Superintendent: "Who's your best girl? What does she get out?"

Foreman: "Well, generally Clara Donohue or the big Swede do the most. They get out about 10,000 a day."

Superintendent: "Pay 'em 13 cents a thousand, that'll make 'em hustle a little more."

Then and thereupon the rate became 13 cents and it stays at 13 cents until the employees become too much dissatisfied. The employees always know whether or not a rate is fair but the employer commonly does not. A bad rate will deter production for the operators will quickly realize that it does not pay to struggle along against odds and they will work listlessly until another job turns up.

SETTING PIECE RATES MUST BE CAREFULLY DONE TO BE EFFECTIVE

Here is an example of rates that we found in a New York plant. The rates for women on work of approximately the same grade varied from 13 cents to $4.67 per thousand; working steadily and with equal skill it was possible for some girls to make only 68 cents per day while others could go to $4.23; the men's rates were so varied that where one man could earn $4.38 a day another could not possibly do better than 61 cents. Of

course many of the employees smarted under the injustice and the production was at the lowest ebb—both in quality and quantity.

In setting a piece rate, it is necessary carefully to study a number of operators at work—find what each is doing and what each could do if waste motion were eliminated. Thus you will gain the average theoretical maximum; then deduct a liberal time allowance for the personal needs and you will have a basis on which to fix the exact cost. I think that at least 90% of the piece rates throughout the country are inequitable to both the employer and the employee and do as much to retard as to augment production.

But proper piece rates can be devised for almost any repetitive operation—even trucking. A large mill had three big trucking gangs working 10 hours a day with usually an hour or two overtime each day for one of the gangs. The mill expected to increase its output by at least a quarter and it was looking forward to another increase in the already very expensive squad. The mere hauling of materials in and about a plant will frequently run to 25% or 30% of the wage total, so that trucking should never be overlooked merely because the average daily wage of the men is low and the labor turnover high.

Two men had been required to pull each truck and they had moved very slowly under a flat wage of 25 cents an hour. We got rid of one gang and fixed a rate which would permit a wage of $2.97 per day if the two instead of three gangs did all the hauling. It was speedily discovered by the workmen that one man could easily pull a truck at almost a dog trot. Then the factory made the addition to its output that they had contemplated; the two gangs still found that they could attend to all the hauling and have a little time left over for themselves; instead of the old $2.50 per day, the

men found that they could earn $3.85 per day without any very serious difficulty.

That company had formerly found itself in a continual battle for labor; under the new scheme they were enabled to turn out a quarter more work with a third less men. The wages of the men increased 36%, but the direct labor charge to the establishment decreased 21%. That is only one example of what properly based piece rates will do with unskilled labor.

ANOTHER INSTANCE WHERE A WRONG ROUTING PLAN WORKED HAVOC

Take another case—this time in a munition factory working on three-inch shells for the Russian government. The plant was new—it was used solely for the making of the shells—but the output was below the most reasonable expectations. We found a not unusual combination of circumstances—that there was a neck-of-the-bottle point in the operations and that the wage incentive was faulty.

The machinery was of excellent design and capable of turning out a large quantity of work—had it been balanced. But there was a shortage of grinders and that was the neck of the bottle; the machines both before and after the grinding operation were capable of turning out more parts than they were turning out, but the grinders could take only so much stuff and therefore the capacity of the whole plant was limited by these few inexpensive machines. We removed the obstruction to the flow by installing more grinders. Then we studied the possible rates; it was an easy study, for the operations were all repetitive, and finally we put in the new piece rates. The check at the grinders having been removed, there was nothing to hamper full capacity production—and it was attained within a few weeks.

That company, by these simple changes, increased its capacity over 200% and the labor cost per shell went down from 45 cents to 34 cents.

Translated into dollars, that company was enabled to earn an additional $120,000 per year. That is what the absence of a few cheap grinders and an unscientific wage scale had been costing them. And, what is more, the inspectors have not to the best of our knowledge rejected a single shell since the change went into effect.

It is curious how often the whole production of a large plant is limited by having too few or the wrong kind of machines at a critical point. Such was the condition in another war order plant. The owners had not cared to invest heavily in new machinery nor to revamp the order of their plant; they wanted to get by with what they had so that they might later turn to their usual business without scrapping a lot of expensive machinery. They made a number of new jigs and fitted them to the machines which were already on the floor; some of the jigs were most ingenious and the whole adaptation was clever. But the shells did not come through fast enough. It soon became evident that money was going to be lost on that contract unless more speed could be had, and that at once.

A wage incentive was put in with good results, but still the production did not come up to standard. We found the trouble in 10 heavy lathes; they were averaging 630 pieces a day. Each lathe operation was divided into four divisions, requiring a total time of 570 seconds. The first three operations were heavy turning but the last operation was threading which did not need a heavy lathe. The threading took 130 seconds. This we transferred to lighter machines which the company already had standing idle and these did the threading in 150 seconds, including the setting up. Thus 30% of the capacity of the big machines was

released and the capacity of the plant rose in a corresponding amount. That 30% made the difference between a fair profit and a heavy loss.

Sometimes the profit goes into the scrap heap. Whenever one finds that a considerable portion of material has to go to scrap after an operation, it is well to look closely at that operation. And especially is this the case when materials, as at present, are hard to obtain in regular deliveries. A New England munition maker found that the copper rings which are forced on the brass shrapnel cases to protect the rifling of the gun, were costing too much money. At first these rings had been cast and machined but the expense of this method was prohibitive. Then drawing was resorted to; copper plates were drawn into cylindrical form and the rings were cut from the cylinder; this was cheaper than the casting but the waste was high. When the plates had been drawn and the rings cut, there still remained the copper which formed the bottom of the cylinder and this had to be tossed into the scrap heap. Of course the scrap was sold, but there is a deal of difference between the selling price of scrap copper and the purchase price of sheet copper; the discarded heads formed an approximate quarter of the total copper consumption of that firm.

IF YOU HAVE A SCRAP HEAP PERHAPS YOU SHOULD LOOK THERE FOR LOST PROFITS

That scrap worried us. The company had use for several sizes of rings and shortly we hit upon the solution of the scrap problem. When the plate had been drawn for the large size rings, the discarded head was again used as a plate from which to draw smaller rings and so on until the head which was finally left was so small that the amount of unused copper, compared with the used was negligible. From an ethical standpoint

we cannot reveal the profit made by our client, but the reduction of waste augmented that profit by several hundred thousand dollars.

Solder is a very expensive article but how many concerns have soldering standards?

Experiments in a canning factory showed that an average of more than 17 ounces was used on each 100 cans. We found that the cans could be as well soldered with an average of 5½ ounces per 100; each operator was turning out around 8,000 cans a day, so a sheer waste of about 12 ounces per 100 cans was something to warrant attention. The argument against cutting down the solder supply was that the men would skimp and that the proportion of leaky cans would be too high, but, since the cans had to be inspected in any event, that objection did not seem serious. A bonus payment plan was put in, based on the ability of the men to keep near to the 5½-ounce allowance for solder and without diminishing production. The scheme was entirely successful; the men shortly discovered that it was to the advantage of their own pocketbooks as well as that of the firm to keep down the solder consumption and the result was a saving of more than $500 per man on the item of solder. The production rate was just as high as ever.

In drawing brass tubes one end is fastened in the jaws of the draw bench; how much tube may be so fastened depends upon the workmen—some fasten more than others, but all that portion which is so fastened must be cut off the finished tube and sent to scrap. We saw in one plant that the average waste from this cause was 18% and we calculated that 7% would be a reasonable waste. We adopted the simple method of charging the workman with the material he received and paying him upon the basis of good tube turned out; if he were careless in the handling of the tube, that would show at once

in his wages; within a few weeks the workmen learned that they had been clamping an unnecessary amount of tube in the jaws—unnecessary because it affected wages. The total scrapping dropped from 20% to about 7%.

When a manufacturer, a retail dealer—anyone in fact—is up against a need for more production without taking on more men or extending the plant, it is just as well to see if the most is being had from the things and the men that are on hand. Usually one does not have to travel far afield to seek improvements.

IN this country the war has leveled class distinctions to a very great extent. As an example, some time ago I was the principal guest of the Associated Chambers of Commerce. In speaking to them the first thing I said was that the age of miracles was not yet past. Before the war they would as soon have thought of inviting the Archangel Gabriel to be their principal guest as of inviting a labor member.

JOHN HODGE
Great Britain's Minister for Labor

CHAPTER XXIX

FINANCING DURING THE WAR

By JOHNSON HEYWOOD
of the Editorial Staff of FACTORY, the Magazine of Management

Many business men have heretofore looked upon finance as a function apart from their business, as something that had to do with Wall Street, safety deposit vaults, and bronze grills. They felt that as long as they made a good product, or were wise traders, they would be independent of finance.

But the war has brought new conditions, sudden demands for ready cash to meet war taxes, and so on. These demands mean that basic financial principles must be considered closely. What these fundamentals are, and how they affect the business man, is indicated in this chapter..

A GREAT many people who did not think they were living extravagantly are learning, under the pressure of war-time conditions, what thrift really is. Many of them will retain their new habits of careful living when peace comes and prices start down again. In the same way business men today admit that conditions have forced them to learn and to use better methods or go to the wall. A grocer tells me that he pays one clerk $22 and another $30 a week, nearly double what he paid three or four years ago.

"In the face of costs that have risen all along the line," he said, "my customers have stopped buying the most profitable goods. They have cut out the non-essentials, what we call 'fancies,' and now confine their purchases to the plain, staple foods that carry a small margin of profit for me.

"And yet," he continued, "my profits from the business as a whole are as good as ever. I've had to learn to conduct my business better; to "finance" it, I call it. In other words, I manage it better.

"I call good management, 'good finance,' because it results in working my capital harder. I keep stocks lower and force sales more rapidly; that cuts down the money tied up in stock. I scrutinize credits closer and keep after 'slow-pays' harder; that cuts down the money tied up in accounts receivable. I have induced many customers to pay cash, by making it worth their while; that keeps some of my dollars spinning. I have cut deliveries to two a day, thus releasing one wagon, and so all along the line war has taught me how to finance my business better."

This grocer has, in his own way, hit upon a fundamental that underlies all business from the news stand to the steel mill: that good business is good finance. And methods that give increased turnover in peace time have intensified value in war time.

A glance at the financial papers show numerous incidents of corporations borrowing term money at high rates, 8 and 10% or more, and of others which are unable to pay dividends in spite of largely increased earnings. Their credit is of the highest. Other concerns have earned dividends but can't pay them because the profits are tied up in inventories. Both difficulties are caused as a rule by lack of cash in spite of the fact that there is more money in this country than ever before. This is undoubtedly true, but the demand for it has become so great that comparatively there is a money shortage for term investment. Government regulation will probably be used to handle this situation before long.

Restricted money always existed in countries which were at war. It is not necessary to inquire deeply into

why this is so, we have already indicated it. The essential thing is to find out how we are to get along with what money we have, without borrowing while there are so many needs to be cared for.

The answer obviously is to work harder what money we have. Keep each dollar turning over so fast that you can't tell which side is up, the lady or the eagle. This should do away with the need for a great deal of financing with outside money, and this in turn tends to relieve the tightness of the money market. This means also that the financing of new enterprises should be kept to the minimum, for the capital required might be used to better advantage elsewhere. This point is so important that the Chamber of Commerce of the United States thought best to issue the following bulletin:

HUSBAND INDUSTRIAL RESOURCES

Of far-reaching effect to business men is the following recommendation recently made by the Council of National Defense:

Every effort that this country is capable of making should be applied to bring the war to a speedy and successful conclusion.

The resources of the country in a general way may be said to consist of men, money, and material, and during the period of the war any new enterprise or undertaking should be tried and justified by the test:

Will the men, money and material so applied best contribute in this way to the winning of the war?

New enterprises which are not fundamental to the efficient operation of the country's necessary activities should not be undertaken. This will not result adversely upon business or conditions of employment because every man and every resource

Housing workers properly counts, especially in war time, and this dormitory for colored workers provided by one plant furnishes better quarters than many of the single men could find outside.

If you can't keep your men, perhaps the construction of a few houses like these will lower your percentage of labor turnover, an important factor in these war times. They cost $1,500 apiece.

"The employment of women increases productive capacity, apart from any shortage of male workers, by leaving men free for more productive work."—Lord Airedale of Gledhow.

It is a duty to keep every worker in tiptop shape physically for war-time work. Employees in this office have daily recesses for simple calisthenic exercises.

will be needed during the war. All effort should be centered to help win the war.

There is no uncertainty or ambiguity about this statement. Every man who wants to help win the war has now an acid test to apply to any new enterprise or undertaking.

Men who are considering new enterprises—public improvements, dwellings, factories, industrial work of every description, and so on—should be guided by this test.

The action of the Council of National Defense should prepare the minds of business men for similar action in regard to the full operation of those industries not essential to the national defense, or to the consumption by the public of luxuries and non-essentials. In fact, in the course of time no one need be surprised if during the war the use of labor and materials for all unessential purposes is made impossible by regulation or statute.

As a matter of fact, few business men realize what a large amount of money is locked in their businesses that can be released "for active service," by better methods. Let us see what the dead pockets are in a single turnover of capital. Capital has been turned over once when it has passed through all the stages from cash to cash.

A CAPITAL TURNOVER

Manufacturing: (1) cash; (2) raw materials; (3) goods in process; (4) finished materials; (5) accounts receivable; (6) cash.

Merchandising: (1) cash; (2) stock; (3) accounts receivable; (4) cash.

It is plain that in a manufacturing enterprise there are four principal forms that capital takes between the

beginning and the end of a turnover. For a merchandising concern there are two. Any of the forms may be pockets in which capital lies unproductive.

The amount of capital tied up in any of these forms may be expressed as so many days' sales. For instance, if you are a retail merchant with average sales of $100 a day, and have a stock of $5,000, your stock is equivalent to 50 days' sales. Now every extra $100 stock you carry adds one day to the time it takes you to turn your capital. Did you ever look at it that way?

The same holds true for the manufacturer in the amount of raw material, material in process of manufacture and finished goods on hand. For both kinds of business the time that elapses between receipt of goods and the sale of them is just so many days added to the time of turnover.

DO YOU CONSIDER ACCOUNTS RECEIVABLE IN FIGURING RATE OF CAPITAL TURNOVER?

Now most business men will agree offhand that every day added to the time it takes to collect accounts receivable adds to the turnover period, but they don't always realize that every dollar of accounts receivable has the same effect. Assume again that your sales are $100 a day. If accounts receivable are $3,000 that is 30 days' sales. If they are $6,000 they amount to 60 days' sales. Now isn't it apparent if they rise to $6,000 from $3,000 and the average daily sales remain the same, that 30 days has been added to the turnover period? Suppose that you are the man whose average sales have been $100 a day, and your accounts receivable have been $6,000. Suppose also you have been turning your capital four times a year or once in three months. Now suppose you can cut your accounts receivable to $3,000 and keep them there. You have then taken one month from each capital turnover and now turn your capital every two months

or six times a year. That has been done simply by speeding collections. It's not out of the ordinary; in fact, it is just such things as this that the war is teaching the business man about finance.

Some concerns that have adopted the trade acceptance plan of selling report that they have, by eliminating "accounts receivable," increased their capital turnover as much as three or four times. This is hardly the place to go into a description and discussion of the trade acceptance. It's enough to say that if you are not already using it to release for your own use the money that your customers owe you for goods, you are perhaps not getting 100% of your capital. That means that you are not doing your full duty to your country in war time. If you don't know how the trade acceptance can help you, ask your banker or write to the editors of SYSTEM.

Now, to go back. Every unnecessary day you keep materials or goods in your store or factory is that much added to the time you take to turn your capital. One manufacturer who realizes this has a red tag put on a part as soon as any operation is finished, which says:

TO TRUCKERS
Rush me to the assembly room.
I'M DONE

He recognizes that when a $10 part lies idle by a machine for a day, it means that a $10 bill takes an extra day to "turn over."

The same holds true for a retailer. When you unpack a box of goods, don't put them away, awaiting a call—sell them! Merchandise them, mark them so they will sell, get your salesmen to push them, and get them "turned" into money. By doing this you may be keep-

ing up with the rising cost of doing business, and you'll be cutting down on the demand for money. In that way you will be helping to win the war and perhaps making patriotic profits for yourself.

All of the methods we have touched on here tend to keep a business "liquid." This has a war-time value beyond cutting down borrowing needs. There is the question of war taxes, for instance. There is hardly a business man who will not have these to pay, and they must be paid in cash. The fact that you are solvent and have a greater net worth than last year will not help you if those profits are tied up in inventories. Perhaps you feel that when the tax collector comes around you will be able to borrow from the bank on the strength of your excellent condition. Perhaps you could, but what would happen if every business man did the same? The banks would have to lend considerably in excess of $1,000,000,000. There is no prophesying what that would result in—serious stringency at least.

So it will be wise to order your business so that your cash position will be strong when tax day comes. Keep your bank balance as large as possible all of the time, as that will prove you have your capital turning rapidly.

Don't overlook the fact that with prices of all commodities high there are especially attractive profits to be made by taking cash discounts. When you used to buy goods for $1,000 and take 2% off for cash you made $20. If those same goods now cost you 50% more your cash discount profit is $30. If your business is liquid you can take these profits.

After you have examined your business carefully and eliminated the dead pockets that swallow profits, go to your banker and show him what you have done. If you really have increased your turnovers, he is apt to know it from the number of checks that pass through your account. But tell him about it anyway and see that he

has frequent statements of your condition. Then if you should need to borrow you will be in an especially favorable position to get his help.

It is well, of course, to have a surplus fund well invested that may be drawn on in an emergency. War-time conditions affect somewhat the best form to keep this surplus in. As we saw, term interest rates always have a rising tendency in war time. That is just another way to say that security prices in general fall.

Nobody likes to see the stocks and bonds he has bought depreciate in quoted value. Nevertheless, many of the term investments now selling so as to yield high returns are excellent investments. Of course if what you have to invest will probably be wanted for use more or less currently, then you'll turn to short term notes, trade acceptances, bank acceptances, or government tax notes or certificates of indebtedness. Now as always safety and marketability are chief considerations when investing a surplus you may want to liquidate soon, for if the money is needed there should be no question about getting the money out quickly.

After all, finance is not so different in war time from what it is in peace time. Good methods, whether of buying, selling, or finance, simply have intensified value to the business then.

A NATION *does not need less banking accommodation in war than in peace. Financially the American people could not be better prepared to play the part they have so valiantly decided to play than they are today, thanks to the sound financial policy they and their government have pursued in recent years.*

SIR GEORGE PAISH

CHAPTER XXX

WAR-TIME BUYING PROBLEMS

By W. J. AVERY
of the Editorial Staff of the A. W. Shaw Company

Perhaps no business function has been intensified more by war-time conditions than has that of buying. In some lines stocks are not obtainable at any price, in others prices are extremely high. Public demand—always more or less uncertain—certainly is not more stabilized because of war-time conditions. They buyer must, therefore, keep a closer eye than ever on every phase of his problem, lest loss of good will, and perhaps even direct money loss, be suffered. This chapter discusses some of the important conditions and phases that war brings home to the buyer.

HOW can I buy to conduct my business most advantageously during these war times, and, at the same time keep the wheels running so smoothly that possible necessary reorganization of my buying policy when peace comes will not throw my entire business machine out of gear?

The answer to this problem is, perhaps, the most serious question the business man, whether large or small, faces today, and to its solution he can profitably devote much of his strength and energy.

In considering this problem of war-time buying perhaps it will be most convenient to divide it into the following subdivisions and take up each in turn.

1. The probability of curtailed consumption in some lines, and of increased demand in others.

2. The desirability of buying heavily as against buying lightly and in smaller amounts.

3. The possibility of changes in public taste, and demand, and the necessity for each business man to study his local situation, to ascertain how the war will affect the different classes of his customers, and the demand for his various lines. This is to be done, not necessarily in order to buy less, but to buy wisely.

The first of our subdivisions apparently is more than a mere possibility. Extreme luxuries are less in demand and probably this demand will continue steadily to grow less if prices of absolutely necessary commodities, such as foodstuffs, continue to rise. Of course, as was true in Great Britain, on account of doing war work at wages higher than ever received before, certain classes of workers may have a greater purchasing power and no doubt will buy goods which they never before have been able to purchase. For instance, in some English communities men who did the roughest day labor before the war became heavy purchasers of luxuries such as pianos and furs, when wages went up.

On the other hand will there not be an increased demand in some commodities to offset the reduction in others? Probably, but here again the buyer must watch and analyze carefully. With a close eye upon his stocks, the merchandise that is moving most rapidly will be detected and buying plans laid in accordance.

Let us go on to the second of our three subdivisions—whether to buy heavily or lightly.

In some lines there can be no heavy buying. That is sure. Enough merchandise is not in existence, and probably will not be until peace comes again. But in other lines there are considerable stocks obtainable if the buyer wishes to pay the price. Shall he pay it and stock heavily?

There is a danger of overstocking at high prices that is readily apparent. Individual opinions to the contrary there is always the possibility of the war ending sud-

denly, prices dropping, and overstocks becoming a loss. Then, too, perhaps the possibility of government taxes affecting goods currently in one way or another seems to stand as a deterrent to very heavy buying.

Furthermore, overbuying that amounts to hoarding is not right at a time like this, and is, of course, to be rigorously avoided. There are no two ways of looking at this.

Every business man knows that the owner of any commodity which is in large demand and short supply has, in the absence of government regulation, two practicable price alternatives. He can sell at a price scrupulously measured to meet the legitimate charges on the transaction, including, of course, fair allowances for foresight, initiative, and insurance against "lean" times to come. Or he can sell for more—up to "all the market will bear."

In ordinary times the law of supply and demand serves as a sufficient check on this range of free choice with respect to most commodities. But now that demands are generally heavy upon short supplies, and supplies are more difficult to increase because of the war, the case is altered. The private owner of important commodities more often finds himself in a position to take abnormal profits. Looked at frankly, however, this policy discloses about as little to commend it to the business man as to the country.

It does offer an immediate chance for extra profit, but less and less security in the use of it, thanks to the general attitude toward excessive war profits.

'Against this doubtful advantage, the policy offers a long list of certain and cumulative disadvantages. It raises the cost of living. It lowers real wages. It lends what color there is to the charge that the war is a capitalistic enterprise. Thus it sows distrust among labor and the public and so weakens the government's hands.

At the same time, it adds enormously to the government's administrative burdens: first, in price regulation, the difficulties of which are only beginning to appear; second, in excess profits taxation, which, for all the trouble it makes, is only an elaborate business of baling out while someone else pours in; and third, possibly, in control of private business.

In all this, of course, the policy serves as an effectual way to jeopardize, if not to destroy, the conditions in which Americans like to do business.

The typical far-sighted business executive will concede the principle that the proper measure of income for any concern during the war is the amount which will justly reward all services rendered and enable the concern to maintain and develop its essential services; and that any more is not only wrong from the patriotic point of view but dangerous to the business itself.

Such an executive will have regulated his prices as far as possible in accordance with this principle before the government finds it necessary to do so. He will have seen that this is sound business policy, and that the individual executive is in a position to carry it out with better understanding and effect than any outside agency.

If for any reason he is unable to do this sufficiently, he will welcome government price regulation, as far as it is practicable and fair. And if there still remains an excessive war profit, he will welcome a tax which will take the excess.

But, first and most important, he will have done what he could to make such government action unnecessary.

In this same connection let us consider the following letter written by a manufacturer, who was called into war service some time ago, to the department heads now in charge of his business. The letter is quoted without comment:

You will remember that I have written you several times about the policy of our business during the war, how it is our task to be of the utmost assistance to . . . (the lines of business the plant supplies), so that they can increase their productivity and do so with as little use as possible of the men and materials that are desperately needed for defense.

I want to urge this on you again, but more particularly I want to urge you to bring our business to the same basis.

Remember that economy in labor and materials, and not necessarily reduction of expenses, is the essential thing. You should strive, not primarily for larger volume, but to see that whatever volume we have is distributed where it will be of advantage to the country. I hope that every article we turn out will be so conceived and placed as to do the most useful possible work. In other words, it is not of the first importance to me during the war that our business should make money, beyond what is necessary to keep the business fit for its war service. The essential thing is the war service.

I am not outlining this policy as an idle matter. I believe in it thoroughly and absolutely, and it is my authority to you to determine your action on all matters connected with the business. . . .

I do not want you to get a tinge of hypocrisy about profits. If we can do the things I have mentioned and make a substantial profit, so much the better. But remember that the policy is, service first, and profits second.

The fact of outstanding importance is that with the coming of peace the general level of commodity prices in the United States will probably fall. It may not fall to the point which prevailed prior to the war, but it will no doubt fall. It is not unreasonable, many feel, to expect that the downward movement will start shortly after the coming of peace, and that it will continue for a considerable period.

The considerations which lead to the conclusions of those supporting this stand follow. In the first place Europe will resume production. The abnormal demand for many commodities which Europe has been obtaining from us will be lessened. Her population will re-

sume its place as soldiers of industry, in the factories and upon farms. Many of her establishments which are now engaged in making ammunition and other commodities of warfare will begin to turn out the commodities needed for consumption during times of peace. Her industry will again be placed upon a peace basis. This may mean, in due course, a material decrease in the European demands for many of our products. But coincident with this lessened demand, there probably will be an increased supply of certain commodities in this country. In many lines the supply which may be thrown on the market by our establishments will be much greater than was the normal supply before the war. For many of our factories have enlarged their facilities and their equipment during the past two years. They will no doubt make an effort to keep up this increased production and to market their output. Further, new plants have been established to make war exports. These will of necessity turn their attention as far as possible to making commodities during times of peace.

Perhaps the buying plan of a construction company will help out here.

This company was in the market for 25,000,000 feet of lumber. The buyer made the proposition to lumber salesmen that his company would contract for the lumber, to be delivered and paid for at the rate of 1,000,000 feet a month, with the privilege of increasing the delivery rate at any time. This plan, of course, threw the burden of storing the lumber on the yards. They demurred but finally agreed.

Obviously this plan would not work in certain lines, but perhaps it is worth trying in some lines that heretofore never have used this contract and delivery plan.

The last of our three plans comes next—the necessity for buyers to study and analyze carefully the particular and localized demand for the products handled by them.

Here again we meet with the probable lessened demand for certain commodities and the increased demand for others. These tendencies no doubt will be localized considerably, as the war will affect different classes of buyers differently, not the least of these considerations being the steady drain of men as they are called for military service.

One buyer who has devoted considerable thought to the subject says he went about his analysis of the situation in this way:

PERHAPS THIS SORT OF ANALYSIS WILL HELP YOUR BUYING, TOO

"First, I analyzed our territory," he declares. "The salesmen gave me a good idea of the class of customers that consumed our goods and told me how they thought the war would affect the majority of these customers.

"Some cities in the territory manufactured or were about to begin the manufacture of various war materials and I figured that demand in those cities for our goods probably would increase—at least hold its ground. But in other cities and in smaller towns demand would fall off, I was sure.

"Given the facts about the territory it was not difficult to estimate its war-time buying power closely enough and to do my buying accordingly. After all, it's just what we do in peace time except that in war time many of us look so far ahead that we cross many bridges that really aren't on the route at all; we puzzle our brains and perhaps spend a lot of money to meet situations that do not arise. English buyers found it best in the long run to "carry on" as logically as possible, neither attempting to load up in fear of a shortage nor to buy so closely from "hand to mouth" that sometimes the hand didn't quite reach the mouth. And, figuring it on the basis that

the war will be either long or short, I think the English plan is the most effective one possible.

Buyers today, just as in peace time, must watch conditions closely, know the demand for their product, and look ahead for possible changes in demand or in the supply of materials. If they are able to do this—and after all success in buying in war time or any other time depends on the foresight and ability of the man on the job—why, then the problem involved ought not to be more difficult than the many difficult ones every buyer faced long before a world war was dreamed of here.

BEFORE the war one imagined that one must have a certain amount of staff. It seemed necessary to have a man for this and a man for that. But when you find that you cannot get the men, you get the work done without them. We now employ 3,000 less men than before the war, most of whom have been replaced by women. Yet our sales this year were the largest in the history of the firm.

THE LATE SIR RICHARD BURBIDGE
of Harrods, Ltd.

CHAPTER XXXI

MUNITIONS YOU CAN MAKE WITH THE EQUIPMENT YOU HAVE

By REGINALD TRAUTSCHOLD, M. E.

"The subject is one that I am particularly anxious to write about, for I feel it a duty to give out as much as possible of this kind of information during this critical period," wrote the author when he submitted the manuscript of this chapter. But good will come of the author's efforts only when readers do their part by giving the chapter careful attention. The data it contains was obtained during visits and work in ammunition factories.

OUR War Department requires help. Very many more shells are needed by the army, the navy, for coast and border defense, than can possibly be turned out from the government arsenals. Private factories of all kinds probably will be requisitioned. Is yours so equipped that you could undertake to manufacture some of these shells, and if not, do you know what additional equipment would be necessary to enable you to take on such work economically, profitably and expeditiously?

At the outbreak of the European War just such questions were put to our factory owners by foreign governments. Today the questions come from Washington. During the three-and-one-half-year interval some of our manufacturers have found out and can be counted upon to come forward now and offer their facilities.

This knowledge on the part of American manufacturers who have been engaged on foreign war contracts

has been gained only through the expenditure of millions in experimental work and much time—which could much more profitably have been employed in productive work —in "learning how."

Bridge shops, pipe factories, foundries, general machine shops and factories regularly engaged in the manufacture of a wide variety of equipment have been transformed into highly efficient arsenals, both here and in Canada. Instances in which factory buildings have been erected to house an already flourishing industry of shell manufacture in the midst of an open lot could be cited —the question of time having been of such importance that the machine equipment was mounted on foundations under the open sky and actual manufacturing of shells commenced before the walls of the factory were started, or even laid out.

Much of the experience gained by the private factory pioneers in the manufacture of artillery shells, big and little, can now be secured by any patriotic shop—a very valuable asset which should go far to guard against the mistakes and blunders made at the start.

Methods of manufacture, operation schedules, cost figures, and so on, must be familiar to any newcomer in the field of ammunition manufacture before an intelligent and equitable estimate can be made on any shell contract, but the very first requisite is to have, or to know, the tool equipment required for the work.

With a factory properly equipped in the way of machine tools, heating furnaces, and such other essentials for the economic and efficient procedure of the work, the knowledge of processes, most efficient sequence of operations to follow, and so forth, can be secured without any great difficulty. If you are equipped to undertake the manufacture of shells you can learn how to engage in such work profitably, from the experience so dearly purchased by others.

The greatest demand probably will be for high-explosive shells, though shrapnel will also be required. Cartridge cases, fuses, primers, explosives, and so on, will all be needed in great quantities but these essentials will in all likelihood be made by specialists. The shell cases, on the other hand, can be made in many factories now engaged in manufacture quite foreign to any activity of this type.

A great number of gages is required for a manufacturing enterprise necessitating the frequent and accurate inspections called for in shell work and a certain number of special tools and fixtures invariably increases output and promotes efficiency in manufacture, but the principal shop equipment required for the main machining operations is not dissimilar to that which is to be found in a great number of factories, many of which have not given full consideration to the possibility of their being of great value to the country.

Many factories with facilities could probably be converted profitably into temporary arsenals, did the management but realize that few additional machines would have to be purchased. Large shells could not be manufactured in many plants without the installation of much additional equipment, necessitating a heavy outlay which might not be warranted. On the other hand, many factories are, just as they stand, with their present equipment of machine tools, in a position to engage in the manufacture of shells of one size or another.

Factories in this country and in Canada which have been efficiently engaged in the manufacture of shells for the allies have employed, it is fair to assume, the most efficient tool equipment which the brief time in which they had to equip for such work permitted—that is, in a period which was no longer than is now at the disposal of the American factories to which the call comes now—and such tools are those which the manufacturer of

American ammunition will likewise find indispensable.

No attempt can be made here to state the number of each specific variety of tool required, the number being dependent to a great extent upon the output required of the factory, but the principal machines needed can be tabulated. From such records the management of any factory contemplating a patriotic as well as a profitable part in preparedness can decide what particular size of shell it can best undertake to make and whether it has the necessary equipment in the way of machine tools. Listed according to size of shell, for convenience, the variety of machine tool equipment employed in certain factories which have been successfully engaged in the manufacture of foreign shells is tabulated herewith:*

9.2-IN. MARK IX HOWITZER SHELLS (BRITISH)

Vertical drilling machines
Special cutting-off machines
Amalgamated heavy-boring machines
Amalgamated heavy-turning machines
Turret lathes
Engine lathes
Banding machines
Lees Bradner threading machines
Varnishing machines
Baking ovens

12-IN. MARK IV HOWITZER SHELLS (BRITISH)

Special cutting-off machines
Radial drilling machines
Heavy engine lathes
Turret lathes
Washing machines
Banding machines
Speed lathes

3-IN. SHRAPNEL (RUSSIAN)

(a) *Cochrane-Bly No. 2 saws*
Hurlburt-Rogers 4-in. cutting-off machines
Special-purpose chucking lathes
Strong, Carlisle and Hammond No. 118 muffle furnaces
Gardner No. 4 double-disk grinders
Watson-Stillman hydraulic punching presses
Frankfort lead pots
16-in. engine lathes
Special polishing lathes
Spray Engineering Company painting machines
West hydraulic banding machines
Three-spindle sensitive drilling machines
(b) *Hill motor-driven lathes*
Vertical drilling machines
Hannifin 100-lb. air presses
Hill turret lathes
Tate-Jones furnaces
Tate-Jones lead pots
Punch presses
Speed lathes
Landis grinders
Gardner disk-grinder.

18-LB. (3.3-IN.) SHRAPNEL (BRITISH)

Cutting-off machines
Gisholt lathes
Engine lathes
42-in. vertical turret lathes
16-in. turret lathes
Jones and Lamson flat turret lathes
P. and J. automatic chucking machines
Muffle furnaces
Drilling machines
Plain millers
Lead pots
Bottling presses
Sandblasts
Radial drilling machines
Landis plain grinders
Brass lathes
Rolling marking presses
Punch presses
Heavy drilling machines
Jones and Lamson turret lathes

*The makes of machine tools are included not only because these machines were actually used but to indicate a particular type well suited to the work. These may be no better than similar tools of another make.

Engine lathes
Cleveland automatics
Special hydro-pneumatic presses
Heating furnaces
Bardons and Oliver turret lathes
Heavy grinders
No. 4 Cincinnati milling machines
Air hammers
3½-ton presses
Special rotary millers

1-LB. HIGH-EXPLOSIVE SHELLS (RUSSIAN)

2¼-in. single spindle automatics
16-in. Reed-Prentice lathes
Zeh and Hahnemann Company presses
Chicago No. 3 automatics
Wood turret lathes
Dalton lathes
Harvey-Hubbell horizontal tappers
Vertical drilling machines
Foot-operated presses
Special washing machines

3-IN. HIGH-EXPLOSIVE SHELLS (RUSSIAN)

Racine power hack-saws
East Jersey hydraulic drilling machines
Vertical drilling machines
East Jersey hydraulic turning machines
East Jersey facing machines
East Jersey heating pots
East Jersey turret lathes
Whitcomb lathes
Gisholt lathes
Woods lathes
Lees Bradner threading machines
East Jersey slot millers
Sipp drill presses
East Jersey automatic tapping machines
Holden Morgan thread millers
Oliver lathes
East Jersey grinders
Engine lathes
Speed lathes
Hydraulic banding presses
East Jersey band-turning lathes

18-LB. (3.3-IN.) HIGH-EXPLOSIVE SHELLS (BRITISH)

Dry grinders
Foote-Burt vertical drilling machines
Herbert sensitive drilling machines
18-in. engine lathes
24-in. engine lathes
20-in. by 6-ft. engine lathes
3x36 Jones and Lamson turret lathes
Holden-Morgan thread millers
16-in. engine lathes
20-in. engine lathes
2x24 Jones and Lamson flat turret lathes
Speed lathes
Billings and Spencer drop hammers
Bliss drop hammers
Murphy pneumatic riveters

4.5-IN. HIGH-EXPLOSIVE SHELLS (BRITISH)

Davis cutting-off machines
Bertram boring mills
24-in. engine lathes
36-in. engine lathes
Warner and Swasey lathes
Steinle turret lathes
Davis turret lathes
Steam hammers
Special hydraulic forging presses
Radial drilling machines
2-in. Jones and Lamson flat turret lathes
Sandblasting machines
Bridgeport semiautomatic lathes
Back-geared drilling machines
Vertical boring mills
Hydraulic banding presses
Special lathes

120-MM. SHELLS (SERBIAN)

Espen-Lucas saws
Snyder 24-in. vertical drilling machines
21-in. Blaisdell lathes
21-in. LeBlond lathes
Automatic threading lathes
Lees Bradner threading machines
Prentice geared-head lathes
Nobel and Westbrook marking machines
Barnes gang drilling machines
Jones and Lamson turret lathes
West tire-setters
1½-in. Gridley automatics
Hand millers
Bardons and Oliver hand screw machines
Vertical drilling machines

120-MM. EXPLOSIVE SHELLS (FRENCH)

24-in. stationary drilling machines
Acme bolt cutters
24-in. American lathes
24-in. Bradford lathes
Vertical drilling machines
24-in. Boye and Emmes lathes
400-lb. Beaudry hammers
Tempering furnaces
Special needle baths
Drawing furnaces
Turret lathes
Engine lathes
24-in. Modern grinder
Power hack-saws
Special hydraulic presses
West tire-setters

8-IN. HIGH-EXPLOSIVE SHELLS (BRITISH)

W. F. and John Barnes vertical drilling machines
Root and Van Dervoort cutting-off machines
Root and Van Dervoort special lathes
Portable drills
Baker drilling machines
West banding machines
Potter and Johnson lathes
Vertical drilling machines
Engine lathes

These equipment tables, for the most part, do not include the small hand tools which are naturally required, as these are to be found in the tool rooms of any well-furnished machine shop. Because the names of well known machine tools are inserted does not mean that the particular make of tool specified is necessarily better than a similar tool of some other make, but it does indicate the kind of tool which will prove satisfactory for certain operations in the work in question.

The size of tools are also but guides and in a number of instances it is quite possible that a tool of larger or less capacity would prove even more satisfactory. It must be remembered that the tools actually used, those which are tabulated, formed in many instances part of the regular equipment of the factory before engaging in shell manufacture. When possible it was, and it will be in the case of factories which may now enter the field, advisable to press into service all the shop's available equipment, rather than assume a heavy outlay for new tools at the very start.

The machines in the several lists are named, as far as possible, in the order in which they were made use of in the regular sequence of operations, though duplication of equipment for different operations has not been attempted. This may be somewhat confusing to the uninitiated but the gaps are easily filled in by the well-informed manufacturer.

Some of the lists include equipment of a highly specialized nature and where such tools were used it was found more economical to purchase or build special machines than it was to depend upon the regular shop equipment or upon tools readily obtainable in the open market.

This experience, which was the most costly of all for the firms first taking up the manufacture of war munitions, is now available to the newcomers, without the loss of money and time which had to be borne by the pioneers.

These more or less special tools, the single purpose tools which were developed to meet the demand for rapid production of shells, and the like, are now as readily obtainable as were the more standard machines at the time of the great European demand for machine tools.

THE first essential in a great emergency is to act upon the experience of that wise man of old who realized that strength, whether of men or of nations, comes from "quietness and confidence," and one cannot doubt that the American nation upon their declaration of war with Germany will continue to show that wonderful "quietness and confidence" displayed by them and by their President since the war began.

SIR GEORGE PAISH

PART IV

SOME PROBLEMS TO THINK ABOUT AFTER WE'VE WON THE WAR

CHAPTER XXXII

WHERE WILL EUROPEAN COMPETITION FIND US WEAKEST?

By JOHN HAYS HAMMOND

One of the books that has had the widest circulation in Great Britain during the war—"Eclipse or Empire"—frankly discusses the factors of weakness and strength of England's allies and enemies alike. It recognizes the importance, in other words, of studying your own resources and your opponents'. This chapter of "Managing a Business in War-Time"—and the other chapters that immediately follow it in this part—strives to help win the war by frankly surveying not only some of our qualities immensely favorable to us, but also our possible weaknesses—and by taking up some of those problems of peace times which it may prove forehanded to at least keep in mind if opportunity offers, although of course never at the expense of absolute concentration on the big object of everything now—winning the war.

We have been given first place in the perfection of automatic machinery and labor-saving devices. The German workman has been held a model in point of discipline, but some believe that this valuable quality is secured at the expense of originality. The Hun, however, undoubtedly holds high records for research, the careful training of workmen and executives, the systematic perfection of routine, a keen realization of the possibilities of scientific research, the utilization of waste, and an effective development of cooperation.

Perhaps there is no man better equipped than John Hays Hammond to discuss these important questions. He has given much time to studying commercial problems abroad at first hand, particularly in Germany, and his conclusions in this chapter should be helpful to all business men as having the benefit of his high position as an engineer and his close contact with some of the most important business activities of this country.

IT is time to put our house in order for the business that can be ours when peace returns. And, in the process of making ourselves fit for this business we shall do well to abandon the notion that the world beyond our

shores cannot teach us anything. We have still a good deal to learn in a business way.

Those of us who have had experience in international affairs have long known that all world currents affect the United States and that our boasted insularity is only national blindness. Now the people are beginning likewise to see that whatever moves Europe also moves America, and that we cannot survive in a cock-sure provincialism. Many of us have been deluded into a feeling of national security, financially speaking, because of our so-called "favorable" trade balances, amounting to several hundred millions a year, but these trade balances are fictitious because the invisible exports wipe out the apparent credit balance. The invisible exports are payments of loans, interest and dividends due to European financiers; money drawn on letters of credit and other forms of foreign drafts by Americans abroad; funds remitted abroad for investment by immigrants; and remittances by American manufacturers and merchants in payment of freight shipped in foreign bottoms. This makes a total sum conservatively estimated at from $500,000,000 to $600,000,000 yearly, to be deducted from our trade balance.

We must have a large excess of exports over imports to cover these invisible exports, or we must pay the difference, that is, the deficit, either by the shipment of gold abroad or by selling additional American securities to foreign investors. In competing for foreign markets we must meet our great trade rivals, who, by years of experience and by the expenditure of colossal sums of money, have obtained a foothold more or less firm in the markets we seek. Therefore, to successfully compete with these nations we must secure for ourselves every advantage we can derive from the most efficient exploitation of our national industries, fostered by constructive legis-

lation at home and promoted by able commercial diplomacy abroad.

There should be, in my opinion, a readjustment of our commercial treaties as soon after the war as possible so as to enable our government to make separate treaties with the different nations to mutual advantage, giving us an adequate return for any concessions we may make as to the admission of their exports. This is, admittedly, dollar diplomacy—but good, honorable, legitimate business. One of the effects of the war will be a radical change in the commercial relations between the different European nations. England's tariff policy will probably undergo important modifications. I believe that she will adopt a protective tariff to safeguard her industries during the period of rehabilitation, and, incidentally, as a source of revenue. She will also have reciprocal trade treaties and conventions with her colonies and for a time at least with her present allies, to whom she has given large financial aid during the war.

WHAT TRADE COMPETITION MUST WE MEET AFTER THE WAR?

Germany will in a large measure be shut out of the markets of Europe in the near future. The program of the Allies is not economic, but nevertheless I believe that it will be given a trial for at least several years. We shall therefore be forced to meet a most intense Germany in the few fields which she will have open. We shall meet her in South America and we shall meet her in the Orient, where we shall also have the ever-growing competition of Japan. Europe is now building for the future. An industrial commission is working in France to promote trade after the war and Dr. Dernburg is developing plans for the German commercial conquest of South America. Our home condition makes it necessary for us to export a larger volume of highly manufactured

products than ever before and we must deliver these against the strongest competition ever known.

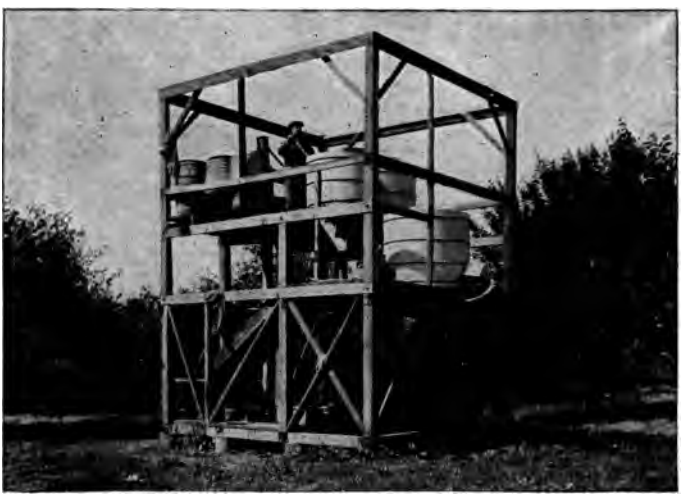
No matter what protective safeguards we throw about our home market, our foreign trade will depend primarily upon our cost of production and distribution. The cost of production is a large subject with many intricate problems, but the greatest factor is workingmen's wages. Better organization, better coordination, the elimination of waste, the cooperation of business and the government—all these factors are of supreme importance; but the individual factor—the man in the shop or mill—will control our prices and therefore control our foreign trade. The American workman receives higher wages than any workman on the face of the earth. He is now receiving greater wages than ever before and we all hope that he continues to receive the highest wages in the world. It would be unthinkable to have the American workman reduced to the pecuniary level of the workers of Europe or of the Orient.

It is of paramount importance, in the interest of the quality of our citizenship, to maintain the relatively high standard of living of the American wage earner; and here let me state that however much we may be opposed to socialism and to demagogic politics, under a democratic form of government instituted by the people and for the people this conception of government must prevail: A nation is well governed only when the function of government is wisely and successfully exerted for the amelioration of the condition of the less fortunate classes of its constituent population. Great national wealth, even though it be widely distributed, and although general prosperity prevail, is by no means indicative of good government, if there exists in the community at the same time preventable or remediable distress among any considerable number of its citizens. In other words, the criterion of good government is the degree attained in

The tractor has helped solve the farm labor problem and at the same time made it possible to do the work much better and when it should be done. No matter where you farm, plans like this will help.

It "snaked" out a mile of fence posts almost as fast as the man on the ground could walk along—and it was real fun for the men, as well as labor saving at a time when labor is needed for war work.

"Victory," says Sir George Paish, "depends as much upon the world's farmers, as upon the armies." These incapacitated British soldiers are helping increase their country's resources.



This orchardist put a well in the center of the orchard and placed the pump on the top platform of this three-story, spray-making device. The spray tank is filled by gravity.

the prevention of misery, rather than in the promotion of prosperity.

The wages abroad are now about one third higher than before the war. I look for high wages in Europe after the war; first, because it is practically impossible to reduce wages; second, because the high taxation which the war debts make necessary will necessitate for the worker a higher gross wage to retain a living net wage; and, third, because the increase in the world's gold supply and the general inflation of currency entail higher standards of value everywhere. However, our wages, on their present basis, will be proportionately as much higher than European wages after the war as they were before the war.

STEPS WE CAN TAKE TO HELP US COMPETE ON FAVORABLE TERMS

This, then, is our situation. We must have foreign trade or curtail our industrial expansion. To gain foreign trade, we must be able to sell on the price levels of our competitors. And as a handicap to selling on foreign price levels, we find that we must produce our goods with the higher-priced labor than that of our competitors.

If the American workman produces so much more per capita than his European or Asiatic fellow, he is certainly worth the higher wage and we may then compete, other factors being equal, on level terms. We have always been inconsistent on this labor question. In one breath we say that our labor must be protected against the low-priced labor of Europe and, in the next breath, we say that the American workman is the best on earth and that he should be paid almost any wage that he asks.

How does our labor compare with that of Europe? We talk a great deal about "Yankee ingenuity," "the superiority of the American workman" and of "American

machinery." Do these terms represent facts or fancies? And how do they line up against German efficiency? I have been in close touch with the industrial centers of Europe for many years and I have known Germany well since my student days there. I saw the industry of Europe just before the war and I know what is now going on there.

It is undoubtedly true that, some years ago, the native American workman was far ahead of the European and we were also infinitely superior in labor-saving devices. For these reasons we secured a very much larger output for each man than did Europe. But other nations have studied our methods—the Germans in particular have taken the best from every system in the world. We still lead in shop organization and we have developed the manufacture of certain products, such as automobiles, locomotives, typewriters and sewing machines, far beyond any other nation, but with these exceptions we are not, generally speaking, ahead of Europe. When last in Belgium, I saw nearly every type of famous American machines in shop use—our lathes, drill presses and automatic devices of every kind; had the foreign surroundings been eliminated I should not have known that I was not in an American shop.

SOME REASONS WHY GERMANY CAN BACK UP ITS TRADE CAMPAIGN

Germany has many of our best machines, she has made duplicates of nearly all of our proudest efforts. In the way of labor-saving machinery, Europe was near us before the war began. The pressure for munitions has called for more and more machine assistance, and now Germany, France and England in the lines in which they are specializing are fully abreast of us. The Krupp and the Creusot munition plants are the most efficient in the world. It is reasonable to assume that the number of

labor-saving devices will still further increase in Europe after the war with the shortage of men and the surplus of low-wage women who can tend light automatic machinery. Women are now doing an incredible amount of work in the munition factories and in other industrial vocations where only men were formerly employed.

Thus our cost of production will come down squarely to the American workman versus the European workman. Therefore, if our workman is to have greater wages he must, in the long run, make greater returns in order to justify his wages. The very best workman in the world—the man who can turn out the most in a given time and who will rise to an emergency—is the high-type American. He is not surpassed and he cannot be surpassed. But the American average is away below the efficiency of the best; our labor is spotty—some is very good indeed and some is below even a moderate rating.

The European workman will not rise to an emergency and he is not taught to speed up. But his general average is high. Take Germany: the German workman is on the job when the clock strikes and he puts forth 100% of his efficiency through the whole of his long day. He may not walk four and a half miles an hour for two or three hours, but he will maintain three miles an hour from coming on until quitting time. He is a machine; he does what he is told to do without question and he does it intelligently even if without imagination. Between one man and the next there is very little difference —there are few stars and there are no drones. The individual output of any one of the Germans will not equal the individual output of our best men, but range a hundred Germans on the one side and a hundred Americans on the other, both groups being selected at random, and you will find that the output of the German group exceeds that of the American group because their general average of skill is higher.

I hold no brief for the German system and I should not like to see the American workman sapped of his initiative by too much discipline and paternalism. I do not like to see a human being turned into a machine. But if our best is the best in the world and our average is below that of another country, then it is well to examine into the methods of that other country to see what can be done to bring up our average. The German workman is a modern product; industrial Germany dates from the Franco-Prussian War, and the greatest progress has been within the 25 years immediately preceding the present war. I have intimately known Germany through this whole period.

During this time the deposits in the savings banks—which are a good indication of the prosperity of the workers—increased fourfold, and at the same time the excess of births over deaths was nearly double that of the United States, so that prosperity was not gained at the cost of an impaired national physique. Not all of this improvement in condition can be traced merely to the skill of the workman.

The cooperation of the German government with business, the effective transportation system, the cartel and syndicate organization, and the adoption of the theory that competition is not the life of trade, have contributed enormously to the result; but, no matter how perfect the distribution scheme, the whole industrial question gets back to the workman. That which first struck an observer upon entering a German shop was the discipline of the men; they had all had military training and they had all been taught to obey orders from their superiors instantly and without grumbling. This spirit of obedience takes away from personal initiative; little improvement in method comes into a German shop from below, and the encouragement of American factories to have employees make suggestions is noticeably lacking. But the

discipline does make for smooth running and, because each man does his job thoroughly, there is little waste human effort.

This discipline is a feeling on the part of the workmen that they will accomplish their own tasks to the very best advantage by working in complete harmony with the carefully thought out orders which have been given to them by their employers. And because of this there is in evidence little of the red tape and formality which characterizes the office and shop relations of so many of our own concerns.

DO YOU KNOW WHAT IS BEHIND THE SUCCESS OF GERMAN MANUFACTURE?

I have said that the orders are carefully thought out. Careful thinking ahead is behind the whole success of German manufacture. The planning is based on knowledge; the executives and the bosses have been thoroughly trained for their jobs. They all work as machines simply because they absolutely know the best way to go about things. We do not commonly find that our men are educated for their employment. I have seen many shops where a fair proportion of the employees knew how to run some particular machine, but they did not know why they did this or that, and even their knowledge of one little segment of the business was largely a manual, and not a mental, knowledge. They went through their motions with their hands and not with their heads.

A man who works with both his head and hands has a long advantage over the man who uses only his hands. That is the advantage which Germany possesses, and it is an advantage which we can overcome only by intensive study of the educational methods which produce German industrial efficiency. Every effort of the German government is put forth to give both theoretical and practical knowledge to the workman and the executive.

When he is destined for a trade, the German boy who comes out of the elementary school knows something of that trade. He may then go to work but he may not quit his education. Extension schools are provided to give the more advanced instruction and the employer must regulate his affairs to permit the boys to attend the extension schools a certain number of hours a week. These hours are arranged so that neither the apprentice nor the employer will suffer.

By the time the boy has finished the extension school he is a master of the form of labor that he has chosen. These German vocational schools are provided with the best and most advanced machinery and the instructors are experts. In fact, one of the objections which is sometimes brought forth by German employers is that the vocational schools are furnished with better machinery than the shops, and that hence the boys are dissatisfied with the poorer shop equipment which they find when they start working.

Here in America we have few good vocational schools. The extension school idea does not obtain, while the night school, more often than not, merely makes the scholar who is working during the day unhappy in his manual labor and causes a longing for a place in one of the crowded professions. The whole tendency of our school training is to make a second rate professional man rather than a first rate mechanic.

England is in much the same situation—indeed, far worse. She has neglected vocational education in the past, but is now alive to its importance. An excellent article which appeared in the British edition of SYSTEM, the Magazine of Business, very clearly sets forth the need for more and better industrial education in England.

On the executive side, the Germans are ahead of us. More especially is this true of the corporations doing an export business. One of the very greatest problems with

our manufacturers is to obtain able executives. Most of our best executives are the result of accident rather than design, and I scarcely know where I might send a young man to receive an education in executive functions. We have been accustomed to say that executives are born and not made; that executive genius is not to be obtained by any artificial system; but the executive does not need the fire of genius. Germany has recognized this and universities provide postgraduate courses for those who desire administrative knowledge of business.

The salvation of American industry and, sequentially, the salvation of our prosperity, is to be found in more and better education along vocational lines. Unless our workman is educated to perform better than his European fellow, and thus earn his high wages, either the wages must come down or our industry vanish. The American workman, properly trained, is considerably superior to the European. Why not give him a genuine chance?

HOW many business men do you think ever made an inventory of their employees? Depreciation is of infinitely more importance in a study of payrolls than in a survey of machinery. And the mere experience of years may bring depreciation rather than appreciation. I frequently think that "efficiency" is a much overstrained word—sounds like nuts and screws—obnoxious when hammered out to employees without the lubricant of recognition of individual effort.

MAJ.-GEN. GEORGE W. GOETHALS
Acting Quartermaster-General

CHAPTER XXXIII

WHAT CHANCE HAS AMERICA AFTER THE WAR?

By THEODORE E. BURTON
Former United States Senator from Ohio

In this chapter is presented what a leader among America's writers and men of public affairs believes will happen when the armies return to the stores, offices, mills and factories. Whether or not you agree with his conclusions, they present a logical analysis of a problem which it will pay every American business man to consider carefully.

WE want to know how the political, financial, and industrial problems of Europe will be solved, not only out of a neighborly feeling for the several hundred millions of Europeans, but also because the commercial destiny of our own hundred odd millions is to a large extent bound up with the fate of those other millions. Without desire for undue national aggrandizement or any imperialistic ambitions, we feel that the time will soon come when we can take the share of the world's trade to which our natural resources and manufacturing advantages entitle us.

Trade will follow its natural channels unless restricted by arbitrary conditions or prejudices. All we contend for the commerce of America is that it be allowed to flow out normally to its natural markets. Our farms raise the produce, our mines yield the minerals, our mills and factories turn out the merchandise that should supply the needs of many markets.

I say "should" supply these markets, because under an ideal system of distribution the actual physical cost of production and transportation of these commodities would compare favorably with corresponding costs for competing commodities of other nations. In many instances it would be far lower.

That we have not opened up these markets in the past is hardly a cause for national shame. Our resources, until very recently, have been so nearly untouched, and our internal expansion and development so enormous, that the best enterprise and initiative of the nation have been directed toward skimming the cream off domestic opportunities. Likewise, most of the available American capital has been tied up at home, together with a large amount of outside capital.

Now these conditions have in large measure changed. The national resources, while not by any means exhausted or even approaching exhaustion, are fairly well gaged in extent and are tapped only in such proportion as the market will absorb them. The great bulk of railroad building is an accomplished fact and the farmers are daily learning how to make two stalks of grain grow where one grew before—and two dollars where one had to satisfy.

Now comes the upheaval abroad. Twenty-four million men are called to the colors by the six major powers alone. Tens of billions of dollars are borrowed by Great Britain and corresponding sums by the other belligerents, bringing the total borrowings far up into the billions. Urgent need is developed for munitions of war and supplies of all kinds. The financial center of the world in its westward course bids fair to forsake London for New York—if, indeed, it has not already done so.

Since we have equipped to handle this tremendous increase in business, should we not also equip to retain it, or its equivalent? We certainly should; for if we do not

establish permanent outlets for our excess production we will surely suffer an industrial setback at the termination of hostilities. It seems probable that the end of the war will mark the end also of the great volume of war business which has sprung into existence. The exceptional demands upon us must cease and the normal demands must be curtailed as the buying power of the nations is curtailed. This statement should be qualified, however, by the contingency of an early peace. Such are the resources of the belligerents and such the historically proven recuperative powers of nations, that a cessation of hostilities before the various national debts become insupportable, and confiscatory legislation is enacted, would probably result in a universal turning of the national exchequers, depleted, but still solvent, to the ends of immediate rehabilitation.

Perhaps the entente Europeans, returning again to their stores and offices, their mills and factories, and attempting to run them short-handed, will feel such a need for American labor-saving and time-saving machinery and office accessories that the stimulated trade in these will be an economic factor of no little importance with us. It is readily conceivable that an unprecedented demand for many such American specialties might follow the conclusion of the war. In this case, it is likely that we should not experience so great a diminution in the volume of international trade. But even with these hopeful possibilities, our entente European market for many commodities, principally luxuries, must suffer for a generation or more.

Now, how ought we to prepare to get our maximum quota of whatever world commerce there is at the end of the war? The competition of the Europeans, when once their vigor of war is turned to commerce, will be intense, not only in their own markets, but in the markets of the world. To aid them in recouping their losses of

And here we see the cripples' part. These baskets were made by crippled soldiers, and the proceeds of the sales go back to the basket-training institutions to help instruct more soldiers in this art.

The schoolboys of Great Britain give their extra time to making munitions, splints, and other army equipment. These boys of the Harrow School are turning out metal parts for war purposes.

Here's an example of war-time conditions. One munition worker, at least, had difficulty in obtaining suitable living quarters. Hence this advertisement. Laborers in British munition factories get attractive pay and probably will continue to after the war.

productive citizens, it is quite possible, even probable, that an embargo will be placed on immigration.

For can not nations with such power over their subjects that they can call them to the colors from the four corners of the earth, likewise retain them at home when an economic crisis impends? These nations not only have this power, but it is my opinion that they will feel their national integrity demands its utmost exercise. The result conceivably may be a decided labor shortage here in America.

PERHAPS THESE LOGICAL CONCLUSIONS WILL HELP SOLVE OUR FOREIGN TRADE PROBLEM

What we must do to take the fullest advantage of our opportunities is to clear up internal industrial difficulties and then go after foreign trade in an aggressive, businesslike, and, above all, a comprehending way.

In straightening out the troubles that have beset the business man, let us in the future pay more attention to the spirit and less to the letter of the law. Regulatory measures designed to correct some of the more flagrant abuses that have existed in American business are well and proper; but in the future let the regulation be directed more toward the punishment of fraud in business and less toward imposing penalties for academic violations of some theory about business. Let corrective measures be such that they will not stay the wheels of progress. That is the supreme need of American industry today.

In my boyhood days the personal touch between employer and employee, now so largely a thing of the past, used to impress me. I imagine a great many men are like Charles Lamb, who couldn't really dislike a man he knew, and that the labor troubles of today are largely caused by mutual misunderstanding based on unacquaintance.

We shall never go back to the golden age of industry, where the "old man" not only knew all the "boys," but knew their wives and children and relatives, visited them when they were sick, and, when one of them died, accompanied the funeral cortège to the hillside cemetery. Such a condition still obtains in some small businesses and small communities; and where it still obtains there you will find industrial peace and cooperation. But in general it belongs to the past and cannot be reckoned with in any comprehensive survey of modern industry. However, even in the whirlwind of steam and machinery, and the relentless, mathematically computed production of our modern factories, much can be accomplished toward industrial harmony, granted only the will of both employers and employees to accomplish it. In the labor adjustments of the future, let the participants be guided by an intelligent consideration of the rights of all, a disposition of each party to try to see the problem through the other parties' eyes and to recognize the economic status and limitations of the other parties.

Where the employer's credit is strained, his obligations coming due, and his market for the time being narrowed, let the men remain loyal. Then, when the money stringency is over and the salesmen have brought in new orders, let him not forget that then is the time to show his appreciation by improvements in working conditions, better hours, cash bonuses and the like. The most far-sighted concerns have recognized the rights of their workers in some such way since the recent commercial revival, as their freedom from labor trouble so eloquently attests.

When the internal obstacles in the way of business expansion have been removed, let us attack the difficult problems that confront us in reaching out for our share of the world's trade. I conceive the difficulties our pro-

ducers must contend against to group themselves under three heads: (1) ignorance of the market conditions in many countries and the customs of the land that so largely govern them; (2) a certain amount of commercial lethargy; and (3) a very positive lack of steamships and bottoms of all kinds. The most serious of these difficulties as regards immediate expansions, of course, the last one.

SOME VALUABLE SUGGESTIONS FOR OBTAINING NEW MARKETS

Granted, then, our ability to deliver the goods we have sold, we should consider where we want to sell them. Obviously we want to sell them to any nations that want them, any nations that have money or its equivalent to pay for them. As I have already hinted, the Europeans are likely to be hard-pressed financially after the war. Our great new markets must then be found where the people are abundantly prosperous, though less advanced.

I refer particularly to the states of Central and South America, because they lie on our continent and we make common political cause with them as regards their autonomy. Of course, the Orient, Oceanica, and Australasia are also promising markets. And there is where our ignorance of market conditions will probably militate against us, unless we adopt a far different policy in our future dealings with these countries.

In the first place, our salesmen must learn Spanish, and learn it well. They must learn not only to talk, but also to think and act in a way that Latin Americans can understand. And, above all, our American houses must be willing to give credit, and especially long-time credit, to reliable concerns in Latin America. For while the wealth of some of the republics, notably Brazil, Chile, and Argentina, is enormous, little of it is represented by tangible liquid assets.

We must have more resident commercial agents in South America. We must establish banks in their principal cities. The National City Bank has made a good start at Rio de Janeiro, but it is, after all, only a start. Before the war, we sold more to Belgium than to Africa; more to Holland than to Asia (though, no doubt, a large amount of merchandise sold to Holland was reshipped); more to Canada than to Asia, Africa, South America and Oceanica combined. It will be seen how great a field is open for us, therefore, if we will only overcome our commercial lethargy, but which is really not a lethargy at all, but only the accompaniment of growing pains.

We are making goods in increasing quantities. The routes from American ports are shorter to some points, and just as short to most others. All we need is some of that well-known American energy directed where it will do the most good, whether that be in Washington making laws, in Turkey selling adding machines, in Philadelphia building ships, or in Buenos Aires financing an abattoir.

* * *. *The demands of peace are even more insistent and more compelling than those of war. No civilized people is prepared for peace unless it take account not only of yesterday and of today, but of tomorrow and the day after tomorrow. The forces that are making for change and for progress, the ideas that are stimulating men to new undertakings and new aspirations, are the driving forces to be taken into account by those who would guide and direct* * * *.

DR. NICHOLAS MURRAY BUTLER
President of Columbia University

CHAPTER XXXIV

SOUTH AMERICAN TRADE KNOCKS AT THE DOOR

By HENRI FRICK
Swiss Consul in Costa Rica

There is, of course, one, and only one, problem to which our attention, effort and money go first now: winning the war. But if there are any opportunities to look over and beyond the strife involved in this problem the far-visioned business men of the country will scan first of all opportunities for strengthening our resources by increasing our foreign trade. One of the possibilities they will investigate in this connection will be South American trade—and here is an article about South American trade by a man who has first-hand knowledge back of his ideas

BUSINESS men in the United States are sending very few traveling salesmen to Central and South America. The shelves of retail and wholesale shops, and even warehouses, in Central America and the countries on the west coast of South America are bare of most sorts of goods, including even "stickers." The difficulties we business men meet in trading with Europe are intolerable. Yet it is rarely that we meet "travelers" from the United States in these markets.

I have always felt instinctively that the trade of the Americas should be more or less between ourselves. I am glad of this opportunity to tell American business men about the opportunities I see for them to the south, the mistakes they have sometimes made and from which I have sometimes suffered, and the work they should be

doing in order to take advantage of this unexampled chance to establish trade between the three Americas—North, South, Central.

As a boy I lived in German Switzerland. I was apt at languages and determined to learn six. By attending school in French Switzerland, I learned to speak French as fluently as German.

Next I secured a clerical position in Italy. After a few years, when I could speak Italian fluently, I went to London and for three and a half years held a place there. Then I secured a position in Spain. Eighteen months, and I could speak Spanish.

I went to Portugal and spent some five years there. Then I decided to travel. I found opportunities in Central America and "south of Panama," as you business men in the States say. After a few years as a salesman, I went in for myself; and for 15 years I have been traveling from Punta Arenas on the Straits of Magellan to the Mexican line, with occasional trips to Canada and some 10 trips to the States. In 1913-14, I was doing a business of $1,000,000 a year. To what extent our sources of supply have been cut off may be judged from the fact that my business has fallen to $200,000, simply because I have had only that much stock to sell. I mention this simply to indicate the opportunity here for Americans who can supply us with goods.

Before the war, the Germans were far in the lead in this trade, although the British stood well in many lines. The United States had a heavy trade with South America, but chiefly in lines where there was no question of competition, such as flour, cottons, typewriters, and oil.

In fact, all through these countries you find an interesting division of trade. In Mexico especially, the Germans are the hardware men, for example; the Frenchmen handle the dry goods, perfumes, and dress accessories,

and the Spanish handle the provisions, liquors, and cigars. In many countries the Italians are so strong that their language is spoken even more widely than Spanish.

Chinese shops have much of the small trade. But the leading firms usually are German. In Costa Rica, for example, the two leading firms of warehousemen, or what might be called wholesale department stores, are German.

HOW THE GERMAN MERCHANT GOT SOME OF HIS WORLD TRADE

The Germans usually had the best prices, though American prices are all right in their lines. Germans were eagerly ready to alter and adapt the sample in order to meet the needs of a customer. They had suited the needs of the countries with long terms. Usually the shipper at Hamburg expected to get his money in six months from date of shipment. Often he allowed nine or twelve months.

He did this because he understood that goods may spend 45 days at sea, and, in out-of-the-way parts of Peru or Bolivia, may be two or three months in getting through the custom house and to the merchant. Then the merchant's return takes time. So the shipper invoiced his goods at the manufacturer's price, plus 5% for his commission as middleman, and it carried 6% interest from date of shipment.

What are conditions today?

For the first nine or ten months the factories of France stopped shipments entirely. Skilled mechanics and foremen were all at the front. Then we began to get orders—orders which come rarely and are incomplete.

I placed an order for Mediterranean sponges. For a long time there was no answer. Finally we received a small shipment, and a letter written by the wife of the proprietor.

She said that she was handling the business for her husband; that the whole staff was at the front; that there were hundreds of letters, and she had two hands. She asked us to send more orders, and said that she would do her best, but that we must always reckon with delay.

In another instance I sent a French concern its money. No acknowledgment! Finally a letter came from the proprietor himself. "I am the only man left in my offices," said he. "I have no people. I am filling no orders."

Another French concern accepted our order on condition that we leave prices and time of delivery open. "We have no chemists, no foremen; everybody is in the field," said they. "Then, too, we have to get a permit to ship out every order, and this takes a great deal of time."

One of my customers went to Paris in July for novelties in women's goods for his Christmas trade. He took his letter of credit, bought his goods and, returning in November, expected the goods to follow by the next boat. They came in February! He had expected his Christmas trade to run two thirds of his annual business in those lines!

England is trying to ship goods to us. I know of two instances where the goods disappeared at sea as the result of disasters. One concern at once made a new shipment, but there was a delay of three or four months.

Immediately after the war opened, European manufacturers and shippers also began to cut credits—to require sight drafts or at most not over 60 days' time. The war risk has at times been as high as 5%, and this also has made it difficult for us to secure goods at reasonable prices from Europe.

I find that your business men are beginning—just beginning—to take hold. I came to the States in 1903, 1905, 1907, 1908, 1910, 1912. Each time I brought some of my friends and introduced them to business men here

in the United States. Almost without exception we were unable to do anything.

Even of late, I have had great American banks absolutely forget to cable money at my direction to protect my credit in Switzerland. And there was no explanation, just as there is no reply this morning from American firms I have written asking whether or not they can supply me in certain lines.

One class of business which shows how opportunity outruns your efforts is insurance. I carry Canadian and Swiss life and accident insurance. The American companies have not made their competition felt.

Especially in accident and fire insurance are there chances for you. There must be tremendous American fire companies, yet I have never been approached by their agents.

IT WILL PAY AMERICAN BUSINESS MEN TO CONSIDER THESE POINTS

American manufacturers have always had enough domestic business to satisfy them, but this will not always be so. They have been inclined at best to think of South America as made up of three cities, Buenos Aires, Montevideo and Rio de Janeiro. Few of their salesmen have crossed the Andes.

Many have never thought it worth while to investigate the cities on the west coast, none of which is larger than 250,000, many of which have only 40,000 or 50,000 inhabitants. My salesman in Panama has just written English makers of rubber heels showing how the American product undersells them. Yet in Costa Rica we are still handling the English brand, which is better known locally.

Only in Panama have the Americans forced the sale of American products. Your manufacturers—some of them—have not even advanced so far as the geography

of this region. Only yesterday one of them said to me: "Costa Rica—why that is in Porto Rico, isn't it?" When I asked another for c. i. f. prices for Port Limon, he hazarded the guess that it was down the east coast of Africa, until I told him it was not far from Panama. Ah, you Americans know where Panama is!

I am not sure, however, but the manufacturer in the United States is of late inclining to exaggerate the importance of South American trade. He seems to think that it will pay him richly and that he can afford to neglect his domestic trade. That can never be so.

When he considers that Buenos Aires has 1,000,000 people, he must also recognize that Argentina has only 8,000,000, and that in nearly every state most of the people are poor and illiterate natives. Perhaps 10 to 20% of the people of Bolivia and Peru will consume imported goods. Out of 2,000,000 people in Bolivia, perhaps 400,000 must represent his market.

The natives of Bolivia and Upper Peru are Indians. They make everything they use or wear. They buy only alcohol. They live in huts.

They have a little ground on which they raise maize. They chew the leaves of the coca (cocaine) tree, and on their simple fare carry loads which would quickly exhaust the white man. They work for 10 to 20 cents a day, and will walk two days to buy where goods are five cents cheaper. They have been cheated so often that they will not change a brand on any consideration, after they have once found it a good value.

They have the llamas, the "railway of the Indian," as they are called. The llama carries his 46 kilos, his 100 pounds, in two bundles balanced across his back. If you overload him a pound, he will not rise from the kneeling position in which he crouches while his pack is being adjusted. He knows! The mule with his 60 or 80 kilos on either side is another important factor in back-

Business is good in England. But government business has the preference and is said to be taxing certain facilities, especially the railroads, in a way that handicaps private enterprise. This view shows the manufacture of clothing for the King's soldiers.

Is our lead in labor-saving machinery being cut down? In the way of labor-saving machinery, Europe was near us before the war began. Now Germany, France, and England are said by some to be fully abreast of us.

country transportation. These are matters which the American exporter must understand by careful study on the ground.

Out of these conditions grow certain rules which may appeal to the foreigner as fanciful, but which must be observed if your exporters are to succeed. I will show you why!

The package that is to go into the back country should be light but resilient. It should weigh from 60 to 80 kilos. I repeat these rules, though I know they have been stated many times. But they are still broken over and over.

One of the largest American textile concerns received an order to ship certain goods in "maritime bales." These bales are made by wrapping the goods in oiled linen paper, covering this with burlap and strapping it with steel hoops. This makes an excellent package, provided the injunction to "use no hooks" is observed. It was one of my customers who placed the order.

The shipper used packing cases of one-and-one-half-inch or two-inch pitch pine. Now the import duty in most South American countries is not levied *ad valorem* (according to the value of goods) but by weight—by gross weight of package and contents. If you send fragile goods, on which the duty is heavy, in a case that weighs twice as much as the goods, you practically pay your high duty on three times as much goods as you get. Tariffs are very high, moreover, usually just about equaling the manufacturer's price for the goods.

When the textile manufacturer's cases came through the custom house, the duty represented a loss of about 25% of the investment. I took the matter up with the shippers, and at first they could not see why they should bear the cost. They thought they had been doing us a favor by making the package even stronger than we requested!

When they did understand, they made the loss good and said that they had been taught their lesson. But they had lost the customer, who would take no more such chances.

Another rule which is grounded in the heavy duties is this: "Never substitute. If you cannot ship the goods your customer ordered, send a sample of the substitute and let him place an order if he wants to." The American manufacturer cannot yet substitute intelligently in export fields and is likely to cause his customer unforeseen losses.

One of your manufacturers happened to be out of a mercerized cotton handkerchief which was ordered. He substituted a handkerchief which was half silk. It cost very little more, and he thought he was doing his customer a favor.

But that silk thread through the handkerchief forced it to bear the same duty as all-silk goods. The duty on cotton was perhaps 10 cents, and on silk $5—a ruinous difference! Then, too, the customer could have imported an all-silk article without paying any heavier duty.

SOME SMALL CONSIDERATIONS THAT MAY "MAKE OR BREAK" OUR SOUTH AMERICAN TRADE

There is a chance, too, of suspicion when goods are not exactly like the sample. Customers may take up the substitute the first time, but the second time they will look at it in the warehouse and leave it on the manufacturer's account at a loss of perhaps half his investment.

The same is true regarding charges. A few American concerns are getting the reputation of not charging the regular commissions which are established for shipping agents.

European agents sometimes did the same thing, but they were always discovered and suffered. A concern

may invoice its goods at 30% discount from the manufacturer's list price plus expenses. The warehouse man is likely to be getting a similar shipment through another agent and to find it billed at 33⅓%.

An explanation is demanded from the agents and the manufacturers. The responsibility is soon placed. Someone's reputation suffers.

To disregard shipping instructions has also made trouble more than once. A firm, for example, sent goods to Bluefields, Nicaragua, via Colon-Panama to Corinto, on the Pacific. From this point, however, there was no connection with Bluefields. The shipment had to go back down the Atlantic side, at an extra cost of several hundred dollars. Freight to these countries is almost as heavy as first cost or duty, and this fact should be kept in mind. There are private and public railroads; roads running through sections where torrential rains and swampy soil make operation uncertain, and other lines, especially on the Pacific side, where conditions are more certain. To hold your trade you must make the customer's transportation problem your own.

The time was when the American business man sent down travelers who could not speak Spanish. In one instance a Central American business man inquired of a traveler: "Do you speak Spanish?"

"No."

"Then come back when you can."

Some of your concerns are now doing much better in that respect.

The conditions which the salesman going to South America will meet are unlike anything he has ever encountered. The west coast from the northern boundary of Peru to the lower end of Chile is a Sahara.

You can lose yourself in its sands and die there, after parching by day and suffering from cold at night. This region is rich in minerals—nickel, mica, and so on.

Still, in the sand and the barren rocks, you may go up to La Paz, the capital of Bolivia, and on up to 20,000 feet. It is hot in the sun, cold in the shade. You want heavy woolens. On my first trip, I was overcome with the mountain sickness. Little more than a half day's ride beyond—and you are in the tropics—in the region of the banana and the cocoa tree.

So you transact business under tropical conditions and also in Potosi at an altitude of 4,800 meters—at the tip, so to speak, of Mont Blanc, the highest point in Europe. For such service, you need hardy, careful, sober men.

It may offend customers if your man will not even take a cocktail with them at the club, but there must be no loss of self-control. I have seen many salesmen in that way disgrace themselves and their houses.

How did Germany train such men? That, too, is an interesting story. If we go back 40 or 50 years, we will find no young German going into foreign trade without first working a year or two in England. In the first place, English, it is the universal language. And in the second place, England at that time was supreme in the art of exporting, which the Germans wished to learn.

So the young German went to an English factory which made the same goods as his father's plant in the fatherland. He offered to work for nothing, or nearly so—"to learn the language." Yes, but in a few years he knew all the secrets of that business.

Another important item is shipping, and here you have an excellent beginning. Your lines of weekly and occasional boats from New York, New Orleans, and other of your ports to the Caribbean can give almost perfect service. But you must have your own complete merchant marine, handled to carry full cargo all the time, like the German and Japanese lines on the west coast.

But neither buyer nor seller nor salesman can act intelligently in building up this business between the

United States and these countries of Central America and the west coast—this unfamiliar territory larger than Brazil, Argentine and Uruguay—without the aid of a properly organized American export bank. This is one of the first facilities to be supplied.

I do not think you want your domestic banks to organize foreign branches. What you need is an export bank whose capital stock is held by your home banks. It should then found branches and appoint agencies through this territory. The German transatlantic banks or the Royal Bank of Canada afford models for you.

WHAT ABOUT AMERICAN FINANCING IN CONNECTION WITH OUR FOREIGN TRADE CAMPAIGN?

There are several good reasons why domestic banks should not have branches. In the first place you need an export bank with very great resources. Then, too, customers of your different local banks will not wish to carry domestic accounts in two places, and in the absence of an export bank, all your important institutions would soon be in competition through their many little foreign branches. If one export bank were established, all the domestic banks could turn their customers to it.

The assistance export banks like the German transatlantic banks can give in export trade is vital. They have branches all over South America, Central America, and Mexico. The Royal Bank of Canada has branches everywhere in the British West Indies, and branches or agencies at all important points on the mainland. Every branch of the German transatlantic banks has a credit index which shows the rating and important facts about business men in the various countries.

The American manufacturer could go to such a bank and it would recommend agents to handle his goods in any South American city. He could also establish his credit with it, and South American buyers could investi-

gate his rating before purchasing. I have shown how, because of the long distances, and because he must pay about as much duty as he pays cost of goods, an importer is forced to have long time on his bills. But the manufacturer in the States could not afford to carry him for this length of time.

Now the native banker is too small and too short of money to perform this function. Money has always been scarce with him and may be scarcer after the war. Rates of interest are very high. In Peru, the lowest is 6%, and it goes on up to 9%. In Costa Rica, mortgages bring 12%. A native banker lends his money on real estate mortgages. Farming is a good business and the farmer who has paid for land at once mortgages it to buy more. Then, for example, only 12% of my property is liquid capital. The business man cannot finance himself on short credits. The result is that the order goes to the concern whose international bank can help finance the transaction. Nearly every nation has its own banks in some of the larger cities of South America.

They work like this: A salesman, carrying his letter of credit, goes into the local branch of his bank and asks to know the standing of the various business men in town. Next day he receives this confidential information by word of mouth, before meeting his customers.

If he finds that a man has capital and that his word is sacred, he is ready to do business. It is a rule with my men that a customer is good for not more than one tenth of his capital on his first deal. The longer you know a man, the more credit you may be able to give him. But failure often begins with overstocking and frequently the mistakes of the salesmen produce the failures of merchants.

But if, I tell my men, it is found that a man is ever guilty of sharp practice, hands off! It is the salesman's

task to find out the standing of a customer before he sells him.

Then, too, when the order comes by mail to the manufacturer in the foreign land, he can go to the central bank, consult its copy of the index, and determine the standing of the buyer. At the same time, he can arrange with the bank for an advance of 50% or even 70% on the bill of lading. If he inquires of his banker as to a bundle of such bills, the banker will say: "Give me a report," and upon finding by his credit index that certain firms are sound he will discount the bills for ⅛% to ¼%.

Now, however, the war has acted like a powerful disinfectant, forcing out most of the weak firms. Still not even the strong importer can liquidate quickly. His dealers will pay, but the business must be continued till they have time to secure other long credits and pay the old accounts gradually. A retiring partner will get back his capital in instalments extending over a period of years. Yet the credit losses of European exporters are as a rule not over one half of 1% in this field.

Another service which an export banker can give is to send exchange where the balance of trade demands that coin be shifted. In giving this service, he of course makes a profit, which depends on the rate of exchange as between dollars and pesos, for example. It was because London was so well equipped to handle the exchange of all nations that most of the coffee from Costa Rica was shipped by way of London.

Three steps will give American manufacturers a basis for trade with South and Central American countries:

1. Salesmen with a knowledge of our tongues and requirements.
2. Arrangements perfected to pack and ship right and make the right terms.
3. American credit and banking facilities.

It will be a help if he also has a local agent or local American Chamber of Commerce which can settle claims in an impersonal way. Many of the difficulties and even suspicions that have arisen are merely misunderstandings.

American business men are beginning to feel South American trade nibbling at the line. You find that we do come and we do buy. I believe that you will no longer wait until an order is in the house before you train a man in packing to meet our conditions or decide to bill on the terms we must have.

But well-planned export banks cannot be set up in a month or a year. You should, therefore, get your bank under way at the earliest possible moment.

When the Royal Bank of Canada located in Costa Rica, its men looked me up—looked up all the business men. And when the bank had been built and equipped, one of the important officials from the home office came around and introduced the manager of the new branch to everyone in town. The attention—the flattery if you will—the cordiality of this beginning and the service offered, led a great many people to use that bank.

The ability of business men in the United States to analyze this situation, meet any present competition and build up a thriving trade with Latin-America cannot be questioned. It is simply a matter of coming to realize that competition will be fiercer in the United States as the years go by and that you will need the steadying influence of foreign outlets.

The query arises: Can you business men hold your export trade after the war?

My answer is: Yes.

As I see the situation (and I have talked with some of the leading business and military men of Switzerland) the manhood and the credit of Europe will be exhausted.

We may count upon these conditions at least:

1. It will require a few years at best to reestablish the old conditions. It is true that the German business army in South America is still there; that subsidized German schools and even German-speaking colonies exist in some parts of Latin-America. But for several years these must be without support for the reasons that follow.
2. The debt incurred by the belligerent countries, and even by neutral countries such as Switzerland, will, according to eminent economists, increase the cost of production 15% to 20%.
3. Poverty and the demand for capital will leave Europe little chance to offer the liberal credits which once ruled in these markets.

To me it looks as if it would be the European exporter who would have the hard task—that of holding his own against merchandise from the United States. My personal opinion is that for at least four or five years after the war, and in many instances, forever, American industries will be masters in exports from the borders of Canada to Patagonia.

WHETHER the war continues or not, the demands on this country, because of the increasing population and the needs of Europe will be great, and an especially heavy demand will be made on this country for meats and live stock.

DAVID F. HOUSTON
Secretary of Agriculture

CHAPTER XXXV

PREPARING FOR THE TRADE CONTEST

By NOBLE FOSTER HOGGSON
President of Hoggson Brothers

So as to secure first-hand information on after-the-war markets for American products in France, the American Industrial Commission to France, composed of a dozen practical business men in positions of eminence in as many lines of industry, was organized under the auspices of the American Manufacturing Export Association and sent abroad on August 26th, 1916, for a two months' tour of inspection. It was the aim of this commission to find out exactly how, and in what ways, the resources of the United States would be diverted toward the reconstruction of the devastated areas.

It is probable that no group of American business men have ever been accorded more complete facilities for making a study of prospective markets. The French government provided military automobiles and escorts, the railroads gave transportation, and, under the direction of a high government official, an itinerary was arranged that gave the visitors every opportunity to know the immediate and future needs of France, particularly in the manufacturing centers.

Noble Foster Hoggson, a member of the commission and president of the large building and contracting concern in New York, prepared this chapter immediately upon his return to this country. It is an authoritative statement.

IT is my belief, based upon a two months' intimate and first-hand study of the industrial and agricultural areas of France, that the reconstruction period after the war will make a call upon American industries that will tax all of our resources and lead to a reciprocal trade that will be markedly larger and infinitely more enduring than the mushroom trade of 1914 and 1915.

The physical destruction in northern France alone is said to be in excess of $2,500,000,000. Seven hundred

and fifty-three cities and towns have been wholly or partly destroyed and there are about 2,000 communes still in possession of the Germans. At the time these figures were given to me, 46,263 buildings had been damaged or destroyed. What will be needed for reconstructing these industries and these towns? How will Europe go about it? What can America do to help?

It has repeatedly been pointed out to the commission that the following are among the materials and equipment of which France will be in the most immediate need:

1. Rolled steel for quick construction.
2. Sanitary and plumbing fixtures.
3. Concrete mixing and concrete block machinery.
4. Stock factory sashes and doors.
5. Wire glass.
6. Factory lighting fixtures.
7. Cranes, carrying belts, and conveyors.
8. Elevators and lifts.
9. Pneumatic riveters.
10. Metal furniture and lockers.
11. Standard factory hardware.
12. Automatic sprinklers.
13. Farm equipment.
14. Labor-saving machinery of practically every kind.
15. Modern factory structures.
16. Hotel equipment.

First of all let us consider the opportunities for American farm machinery, buildings and equipment.

France is primarily an agricultural country. Contrary to the usual belief it has not been an industrial nation. France is distinctly a land of farms. Yet, because of peculiar local conditions, it has not heretofore furnished a market for farm machinery. The farm property is more diversified there than anywhere else in the world, because for more than 100 years the Code Napoleon has required that upon the death of a farmer

the land be divided equally among the heirs. French farms now average about 22 acres each.

There are about 5,500,000 farms in France made up frequently of strips of land that are a mile or two apart. This peculiar geographical layout renders farming difficult because it discourages the use of agricultural machinery which is too costly for the cultivation of such small and widely separated areas. The same system prevailed in Germany 20 years ago, but a law was passed that required these strips of land to be concentrated either by trading with neighbors, or by purchase at their full value. This plan has given the German farmers concentrated holdings, larger fields, and enabled them to develop the land on an efficient basis. A similar law has recently been passed in France and it is expected that the farmers will see the advantages of such concentration.

HERE IS ONE NEW OPPORTUNITY FOR AMERICAN MADE PRODUCTS

The result will make the use of improved machinery a possibility and eventually a necessity, and thus open a market for American farm machinery that has heretofore been closed. To anticipate this demand for farm machinery the French government passed a law in September of 1915 that permits groups of seven farmers to combine in the joint purchase of agricultural machinery, and that provides for the cooperation of the district and town governments in the matter of credits. This legislation, which seems strange enough to Americans, opens a splendid opportunity to American manufacturers. Just how big this market is may be indicated by the figures that follow.

The actual agricultural area of France is 98,000,000 acres. The plowing area is 59,000,000 acres. The vineyards and permanent grazing lands are deducted from this estimate. Assuming that one tenth of this area can

be plowed by tractors, each of which would plow 250 acres, it is found that 17,000 tractors would be needed.

The need of labor-saving machinery, especially tractors, is doubly manifest when one reflects that perhaps one-half of the horses and oxen of France, heretofore used for farming purposes, have been destroyed in the war; in addition, a large number of the farmers will have been killed in the war and a considerable portion of the survivors will return incapacitated for hand labor. I visited many places where men are being taught to work various machines and appliances—men who would be quite unable to undertake ordinary farm work.

The man who was head of the Experimental Department of Farm Machinery for 20 years informed us that his estimate showed that 17,000 tractors, 125,000 plows, 10,000 threshers, and a vast number of other implements, including harrows, cultivators, and similar machines, would be wanted immediately upon the close of the war. And the demand for live stock of all kinds will necessarily be widespread for a long time to come.

Out of the 5,500,000 farms in the country, 85,000 are at present the market for American implements and machinery. As the factories throughout France are now engaged in making ammunition and other war material the manufacture of even such farm implements as were previously produced has ceased. The demand for American made machinery will therefore be, at the close of the war, of permanent importance to both this country and the people of France. But it is in her industrial reorganization that France needs American cooperation more urgently, and it is here that the greatest chance for the American manufacturer lies.

France has been strangely unprogressive in her industries. Under normal conditions her demand for modern American machinery would be slight. As a result of her lack of modern machinery her business in different

centers has been dropping off during the past few decades. With modern methods and modern labor-saving machinery it is probable that she might have held a large part of this lost trade. The war has awakened France to this need, which has become so strikingly manifest.

In visiting many industrial plants I found few that were modern in construction or plan. I was surprised to find in use types of machines which went out of use with us 20 years ago. When I described new American machines having greater production and a material saving in labor, the officers of the companies showed a keen desire to be put in touch with the manufacturers.

The war has made France conscious of her industrial needs and has created an infinitely greater demand for labor-saving machinery than would have prevailed under normal conditions of peace. And this demand is accentuated by the scarcity of male labor, the high cost of labor and the necessity of converting labor to remunerative work. France cannot allow her men returning from the trenches to work at lowly tasks such as the production of raw material. She will need every man and woman available to work at the latest labor-saving machines to manufacture finished products and thus justify their higher wages.

The lathes and machines which are now in use in the ammunition plants will be turned to use in the big commercial warfare which will surely come at the close of the war. At present the factories of France are running day and night, most of them in shifts of eight hours each. The wear and tear on the factory machinery is a factor to be reckoned with. There will not be enough machinery left in good order to fill the need after the constant use it has been put to during the war.

New machines, new parts, quantities of machine tools, together with raw materials and partly manufactured goods, will be in great demand for a considerable period

The unusual demands made upon commerce by the war have resulted in enlarging the usefulness of labor-saving devices. This ship, for example, is using speedier loading equipment.

Each German workman is responsible for certain details. All orders are carefully thought out. Careful thinking ahead, no doubt, is largely behind the whole success of German manufacture.

This tractor does an entire German community's plowing. "In the avoidance of waste alone Germany is far in advance of America," declared Thomas A. Edison recently.

Virtually all of the factories in the invaded regions have been denuded of everything of value, including machinery and building equipment. Will American products replace the loss?

and until France has found her balance in her industrial manufacture as she has in her manufacture of ammunition.

The labor situation is an important factor in this demand for American machinery; it was a factor of growing importance even before the war began. It is not generally realized that Germany and France before the war were neither self-sufficient in the matter of labor. In Germany laborers from Russian Poland were brought in under special contract to do agricultural work, upon the completion of which they were returned to their home country.

ANOTHER CHANCE FOR NEW OPENINGS AMERICAN BUSINESS MEN SHOULD CONSIDER

In France large numbers of Italians, Spaniards, and Portuguese had been drawn upon for harbor and railroad construction work. Upon the entry of Italy into the war these Italian laborers had to return home. The war is not responsible for the labor problem in France; the war has merely made it acute. It is a problem that can be solved only by labor-saving machinery, and in this line of activity America stands almost alone in her ability to help in the reconstruction work.

What will become of the women workers of France who have so capably entered the factories and kept them going at even greater capacity than before the war? This phase of the labor situation is expected to readjust itself naturally. Before the war there were very few women working in the factories, except at such tasks as weaving and spinning. Today, in many of the munition factories I visited, fully half of the employees were women.

One factory superintendent told me that women as a rule learned machine work more readily than men; in some instances the women learned in a week or ten days to run a lathe as well as a man under months of appren-

ticeship. A few employers told me that they were afraid that the men who returned from the front, finding that their women folks were earning more than they themselves earned before the war, would insist that the women continue to be the breadwinners for the family. The women workers are earning more because the price of labor has gone up.

Before the war unskilled labor earned from 70 cents to $1 a day in factories. Now the same class of labor receives from $1.10 to $1.50 a day. Ordinarily skilled labor which earned from $1 to $1.50 before the war is now earning from $1.50 to $2.25 a day. Women before the war earned on an average of from 60 cents to 80 cents a day; the average wage now for them in munition factories is $1 to $1.10 a day, and a great many women are earning as much as $2 a day.

It is obvious that the strong personal feelings due to the war have markedly increased the amount of production even under a piecework system, as men and women both work continuously and at a comparatively high speed with no let-up except at the specified rest and dinner periods. The natural result of a shortage of labor has been a steady rise in the wage scale, which is still proceeding in all parts of the country, not in a uniform way, but in conformity to the rising cost of living, which varies materially in different sections. Generally speaking, the cost of labor, especially skilled labor, has advanced from 30% to 50%: highly skilled labor has risen as much as 150%. The result is that workers who return from the war cannot be squandered on cheap tasks; their time has become more valuable and they must be set to higher grade tasks. Therein lies the opportunity for American labor-saving machinery.

In view of both this increase in the cost of labor and the shortage caused by the war, it is not anticipated that any difficulty will arise because of the return of the male

workers. The available supply of male labor for industrial and agricultural purposes has already been reduced by about 1,500,000 men. It is not considered probable, however, that a great proportion of the women will remain in the industrial life for any length of time after the war. It is hoped and believed that many will return to their homes and resume their domestic pursuits.

With the need of labor-saving machines comes the even more immediate need of modern structures in which to house them. This need is not merely one of the future; it is felt poignantly right now. Temporary houses are wanted immediately, while the more permanent ones are being erected.

HERE WE CAN SERVE OUR ASSOCIATES AND OURSELVES AT THE SAME TIME

After the war there will be a vast amount of construction to be done in France as well as in Belgium. In evidence of this need, it is only necessary to mention that on the French side alone of the battle front over 400 factories have been destroyed. In addition, virtually all of the factories in the regions that have been invaded have been denuded of everything of value, including machinery, tools, war materials, and building equipment. It is everywhere evident that industrial labor-saving machinery of the American type is absolutely indispensable; it must be bought in large quantities and will continue to be bought not only for the duration of the war, but particularly after peace is established and industrial life is resumed in the important northern departments, now occupied by the enemy and stripped of all industrial appliances.

I was impressed with the fact that safety devices had not to any material extent found their way into French factories. The moral responsibility of the employer to his employee in protecting him against unnecessary in-

juries seems generally lacking. In fact, I rarely saw safety devices except on American-made machines, and in those instances the safety devices were shipped to France as an essential part of the machine. With the introduction of new factory machinery after the war will presumably come a demand for safety devices also.

Artificial lighting, despite the extensive amount of night work that is being done in France today, has not been developed so far as in our own country. It has been found in the best American factories that a scientific study of lighting problems has a very material effect on the quality and character of the work.

In France I found an inadequate number of lighting fixtures and an inadequate number of windows. This condition is aggravated by the universal tax in France on doors and windows, each one of which pays to the government two and one-half francs, or 50 cents, a year —an archaic tax which I am told is about to be discarded. The need for American lighting equipment is conspicuous. And this need is not confined to the factory districts, but also prevails in the hotel districts frequented by travelers. Indeed, the opportunities for American goods are perhaps even greater among the hotel districts of France than among the industrial districts. Here lies an excellent opportunity for the American manufacturer.

The hotel industry is one of the greatest of France. At present there are $200,000,000 invested in 25,000 hotels in France, exclusive of the so-called "palaces." It is reckoned that before the war $400,000,000 a year was spent in France by American travelers alone.

At the present time the French hotels, even the most modern ones, do not provide many of the conveniences and comforts to which Americans in particular are accustomed at home. Most of these arrangements and devices add very little to the total cost of the building,

but they do add very materially to the renting value of the accommodations. The French hotel owners are realizing this and are preparing to rebuild hostelries with a care to the comfort of their guests.

Various national bodies, including the Touring Club of France, are thoroughly alive to the seriousness of the problems confronting the hotel interests. The latter has begun a publicity campaign to acquaint the world with the fact that a first-class hotel system is being inaugurated in France, and that foreign capital is invited to take part in upbuilding it.

The French government, through the Senate and the Chamber of Deputies, is giving its support to the campaign; so are many civic associations. Even the railroads are taking part in the propaganda. These bodies have plotted and tabulated the hotel needs of each town or district and collected and placed at the disposal of all a fund of disinterested and detailed information on the needs of the best hotel interests of France. This information is of very real value to the American manufacturer of heating, ventilating, and lighting fixtures; plumbing fixtures; lumber; glass; sashes and doors, and hardware; and accessories.

WE must think more about machinery. If this war is to be won it will be won by the nation that knows best how to use tools and machinery; that knows the secret of quantity production through standardization on one model. Ships can be built faster, better and cheaper if standardized to a single model. One model makes possible vroduction in enormous quantities, reduces cost and improved quality. In this standardization lies the secret of American industrial power, and we need our industrial power in this way.

HENRY FORD
President of the Ford Motor Company

CHAPTER XXXVI

WHAT I LEARNED IN EUROPE

By ELMER R. MURPHEY
President of James H. Rhodes and Company

In this chapter Mr. Murphey draws a vivid word picture of business conditions in the war-racked territories of the European belligerents, including Germany, as he found them late in 1915. Mr. Murphey's observations are those of a business man experienced in transactions of world-wide scope, and his trip through Germany probably was one of the last taken by any American business man of wide experience before the United States was forced into the conflict.

In the light of his observations while on this trip, the author lays down the needs he feels most vital, if America and American business men are to hold a commanding position in world trade.

GERMANY will get back her customers all right—by the same methods she used formerly in foreign trade," a German photographic chemical manufacturer told me in Berlin. This was before the United States entered the war.

This, I think, is the biggest point that stands out from my observation of war-time business conditions in Europe. The American business man, the exporter, the protectionist or the free trader, the believer in preparedness or unpreparedness, may rely upon it that the character of the Englishman, the Frenchman, the Italian, the German, will prove itself dyed in the wool. And the man who works as hard and as long as the German does will still be a hard man to beat.

In October, 1914, our import business took me through belligerent Europe. Just a year later I received the

cable from Italy that occasioned my second trip. No more shipments of pumice were coming out. The boats of our line had been requisitioned by the Italian government. Freights of this class had gone from one to five. The submarine campaign had ceased in the Channel and North Sea, to sting more fiercely the Allied war traffic in the Mediterranean. Freighting contracts were no longer contracts. On five days' notice, I caught the "Rotterdam" for Holland.

By furnishing three photographs, being identified and again taking the oath of allegiance, I secured passports for the belligerent countries. Insurance was not to be had. On the train, an official of a German-American ship line was asked jokingly if he had not "cleaned up" selling stocks "short" during July, 1914. "We were too busy getting our boats into neutral ports," he replied: "We had only eight days' notice."

News at the ship's side that the German frontier had once more been closed forced me to change my schedule entirely and go via England and France to Italy, instead of across Holland and Germany. Presenting my passports, I went aboard, with the life preserver my secretary had donated.

As our ship entered the war zone, a spotlight played on the Dutch flag and the name "Rotterdam" was illuminated in letters four feet high on each side. At Falmouth, instead of being whisked away to London as in times of peace, we lay overnight, forbidden to land. For six hours next day inspection proceeded. At midnight, in a closely curtained train, we reached the darkened city of London.

Taxis were allowed only one light, back and front. Policemen wore a small red light, front and back, for protection in the traffic. At the Savoy, the scene was still brilliant with beautiful women and men in uniform. A police notice in your room warned against

lighted windows. Across at the Lyceum theater are the pockmarks of a Zeppelin bomb that killed 60 people. Lower floors in the hotel are at a premium.

England is sure of success. So are all the other fighters. In every country confidence in the outcome, belief that the war was forced on them, echoes of the bravery of their troops, sadness of mothers, are evident. But the English, like the Americans, seem at least to face the situation and will "see it through."

The masses have been so slow to realize the importance of rush work on munitions, and of response to the recruiting posters and meetings, and the government and press have been distrusted so intensely, that labor leaders have been "taken over the front" and allowed to convince themselves. The appeals for troops sometimes made by such speakers are unbelievable to a cool-headed outsider; but the low growl I heard from a London audience at the description of atrocities in Belgium suggests how hard it is going to be for Germany again to build up friendly trade relations.

PERHAPS THIS SNAPSHOT OF BRITISH HELP PROBLEMS WILL SET YOU THINKING

English firms generally are struggling along with a short force, and mostly new help. Firms display a roll of honor telling how many men have gone from them to the front. Women lift operators and ticket takers remind you of the place women workers are making for themselves—a permanent place just as sure as it is that they must support themselves permanently.

Laborers in munition factories get two or three times their former pay; and wages, thoughtful men in both England and Germany believe, will never drop to the old levels. The ordinary citizen, moreover, has been courted by the government till he is likely to feel his civic importance after the war as never before. British

people, supposedly stolid, self-satisfied, sure that all Americans brag like some tourists and push like some of the salesmen we are believed to send over to make a "clean-up," have taken up with one new idea—to capture the German's foreign trade. And their carefully nurtured prejudice against all things Teutonic is likely to endure after the war longer than any of the other "psychological" or "hate" barriers to trade.

Because of my change of route, I had to secure a special passport for France. By the help of Ambassador Page and Consul-General Skinner, this was done in a day. The German visé I had secured at Chicago excited the French Consul, however, and at his insistence, it was scratched in red ink, and I witnessed the act with my signature, also in red.

This, of course, made trouble later, though at the time I presumed that the German frontier was still closed. Our little, dirty channel steamer, with its life preservers and boats ready for use, as we pulled down the bay passed a nameless black army transport crowded with khaki-clad soldiers with life preservers over their overcoats. Everyone cheered. We were five hours crossing, and ran by a loose mine, at which we vainly fired. Paris has become a city of few motors, few lights, few people, and no able-bodied young men. You meet 15 or 20 wounded or cripples every block, the armless leading the sightless. Every third person is in mourning. They publish no lists, but a man at headquarters said 800,000 out of 5,000,000 had been killed up to November 1st.

Business is dead. The street crossings are no longer crowded. Out of 3,000 employees at the Credit Lyonnaise, a third went to the war and 460 are already dead. Women are conducting what business still goes on. At the great Paris stores, the Louvre, the Gallerie Lafayette, the Bon Marché, the upper part usually has become a hospital, maintained by the concern. Part of the Elysèe

Palace Hotel is a hospital, kept up by Worth and the other dressmakers. I spent my change on cigarettes for the wounded. Boy scouts are serving with zeal and efficiency in hospitals and at military headquarters, and in many other places which otherwise would require soldiers.

By observing requirements to get police permits I was able to visit the factory near Paris which has supplied us with chamois. What I found there is perhaps typical of French industry. The plant was deserted, except for soldiers furnishing army leather. Scarcity of labor has reduced operation at least 75% and only chamois that would have been spoiled by delay is being processed. In English chamois tanneries, the same failure of raw materials from Eastern Europe, Western Asia, and Australia has discouraged manufacture. France is full of orders for goods, but the French manufacturer pays no attention to written orders unless he needs the business. If his factory is busy, or he is diverted, into the waste-basket your letters very often go, and you keep on wondering why you hear nothing. A personal visit is the only sure way to get an answer.

By night train I reached Lyons, completed my work there with the aid of Vice-Consul Earnster, and left for Italy. Awaiting my train at the village of Ambereaux, I had dinner at the inn, with nine French aviators of the training camp about the big round table. At stations in both France and Germany, signs warn people not to talk for the ears of spies. After inspection at the border I reached Turin and met our Italian manager, Guiseppe Currelli, in military cape and puttees: the man I had traveled 4,000 miles to see.

An Italian government decree, I found, allowed cancelation of any freight contract made before the war. Coal freights had risen from 15 to 85 shillings, grain from 12 to 100; and a study of boat and freight conditions

only accentuated the probability of heavy shipments to Europe and high freights for at least a year after the war. Ships that formerly leased at $500 a day now bring $2,000. Yet I saw 27 freighters lying at Genoa awaiting their turn to be unloaded. Eighty dollars an hour—and it takes three times as long as formerly, because lighters, motors, and horses are in the war!

As we go up over the snow-clad St. Gothard pass, we see sentries on every platform. Switzerland has kept her army mobilized at great expense and has suffered in her foreign trade. But life at Zurich is almost normal and actually gay.

GETTING INTO WAR-TIME GERMANY WAS QUITE A PROBLEM

And Germany—from which views of business and public sentiment has come less freely? The German frontier had been closed for eight days. Tomorrow, the German consul at Zurich told me, it is to be open for one day. Incensed that a Frenchman should have used his red ink on my Chicago visé, the German consul finally O. K.'s my passport and I know that, whether or not I can get ahead despite the rigorous German inspection system, I can no longer back out through France.

The morning is cold and rainy. We cross Lake Constance, only a few miles from the shops where the Zeppelins are being made, and land at Lindau. At the dock a new building, half finished till after the war, reminds me of the statement: "No new enterprises are undertaken; no one takes a journey; no one builds himself a house or lays out a park." Everywhere on the continent this is pretty much true—normal industry is marking time while the war lasts.

For an hour, the custom house soldiers go through my baggage, dissecting and feeling with practiced fingers; for another hour I am explaining my scratched passport,

and my mission in Germany. During the examination, I am required to remove coat, trousers, socks—everything except my underwear. At 2:30, truce for luncheon. It is no-meat day and we have fish and eggs. Then follows a procession in which I am accompanied by two armed soldiers, to appear before three other officials, and at 7 p. m. I am released. It was a nerve-racking experience, but I always kept to a smile and steady air of confidence and cordially shook hands with them all around at each place.

At 7 o'clock next morning, I went on to Freiburg in Breisgau, unconscious till my ears informed me of the fact that it was within the sound of the guns on the firing line through the Vosges. Soldiers escorted me on and off my trains and before the authorities.

An indecisive civilian chief of police tried to attend to everything at once and an old gentleman who attempted to interpret for me got things into such a tangle that I found myself practically in confinement, with orders to report again just too late for my Berlin train. The old gentleman's recommendation was that I be returned to London to force the French Consul to rescind his action on my German visé! But my friend came to the hotel to talk over our business, and made my explanations for me at headquarters. At luncheon, five words of English brought down on me the black looks of a German officer at the next table.

At Berlin, matters ran more smoothly, and with the help of Bennett, Schuette, and Roeder, American correspondents, and Consul-General Lay, I soon secured courteous, though negative, answers to the questions which had brought me to the capital.

Berlin is a sobered city. Rubber and oil are so scarce that private motors are *verboten*. Taxis are rare.

The streets are not crowded; young men generally are in uniform. People in mourning are seen everywhere.

Mr. Murphey says: "In England women lift operators, bricklayers, and ticket takers remind you of the place women workers are making for themselves." The young English woman in this picture was so busy laying brick that she didn't even stop to look at the camera.

How Mr. Murphey's passport looked when he got back. The cross-lines (in red ink on the original) were made by a French consul in order to nullify the German visé which he crossed out. In this chapter Mr. Murphey reports his observations in Germany in 1915.

Nickel being needed in the war and gold being held by the government, iron money is used. Because of the many who have made war fortunes, the trade in jewels is thriving. Diamonds, they know, are the most compact form of wealth; and people of this sort are already finding their way to places of refuge from gigantic taxes and military service. The newly rich people flock to Berlin and give its finest hotels an unnatural air of crush and gayety, though there is no dancing and little drinking. Elsewhere, living is frugal. Men in the field and officers are receiving war salary, which is double the peace pay. Firms which formerly employed the men now serving also keep them on half pay. Altogether money is plentiful and prices higher.

THE ECONOMIC CONDITION IN GERMANY APPARENTLY WAS CAUSING CONCERN

I have already referred to the shortage of rubber, oil, and meat in Germany, the stoppage of new enterprises, and the sobered appearance of Berlin. Germany must also be very short of copper, for they were taking the copper roof off the building of the American Consulate and many other buildings.

At breakfast I was handed a bread card and coupons were torn off at each meal. Butter is almost unobtainable.

This same shortage of materials has a definite bearing on the oft-repeated rumor that the Central Empires have been laying up large stocks of merchandise with which to flood our markets as soon as German ships regain the seas.

Chemnitz, for example, has been the center of the cotton industry. Now, however, all the cotton goes for war uses—and wool, also. Toluol, which is the base of many anilines and colors, has been requisitioned by the government in explosives manufacture. Germany's largest

ink and color maker told me that his stock was almost nil, and that he is producing nothing for commercial purposes.

At present, so far as I have been able to find, there is no evidence that Germany is laying by any surplus that will seriously inconvenience such markets as ours. Wages in Germany have increased probably one fourth; a shortage of labor, with continued high wages, is expected after the war; prisoners are being used in the fields and to improve the roads, rather than in manufacture; and in Austria, too, the makers of glassware and the so-called "cottage industries" can not promise deliveries because of scarce and high labor.

What Germany will be able to do after the war is a question closely bound up with German character, and with the labor supply. The German takes a position for life and becomes a highly trained specialist in the particular groove he selects. The German chemist whom I might hire in America at $2,000 or $2,500 and advance $500 a year until he was getting $5,000 or $6,000, and, under the ambitious conditions of America, had developed to be worth it, would serve out his life in Germany at $1,500 to $1,800.

No attempt would be made to give him self-reliance and the management viewpoint, such as the American worker gains, especially by the development of different types of bosses under scientific management. He would, moreover, think less of becoming a manager and putting in long hours of hard, thorough, contented work.

In Germany, and to some extent throughout Europe, the masses do the work; the classes the thinking. Practically all the officers of the German army have been drawn from the classes which have directed German business. And the mortality among them has been many times greater than among the men. Whenever I inquired for a friend in Germany, they said: "Was he an officer?

Then probably you won't find him." In instances that seemed almost typical, 40% to 50% of these officers have already been killed. I take this to be perhaps the most important handicap Germany—and other nations—will face in trade after the war.

Business will also have to adapt its equipment to crippled workers. That foreigners in America will return to these unfortunate lands and that the nations now at war will permit the emigration of the able-bodied seem equally unlikely. Money in Germany is easy, as I have said, and at Berlin I heard repeatedly of reputable business houses which the banks had specially invited to make more use of their banking privileges.

That money conditions in Germany can be as favorable as now after the great war burden is laid seems impossible. Yet German manufacturers and officials are confident. "We will get back our customers," they asserted. "We will get them back through the same methods that won them."

That means the German syndicate. American business men and statesmen should make it their business to know what this term stands for.

GERMAN TRADE METHODS APPEAR SIMILAR TO THEIR MILITARY PROCEDURE

Several years ago a middle western manufacturer hired a Swiss chemist and built up a thriving business in certain chemicals which were formerly made in Europe, but which the German syndicate had not controlled. Then he added chloroform. It was syndicate-controlled, but he figured his costs were favorable to him. The day his chloroform came on the market the syndicate product dropped to 58 cents—his exact cost figures. He fought for months. The syndicate responded to his moves as if it knew the innermost happenings at his office. Finally he decided profits were better than fighting, and sold his

chloroform equipment. That day the price of chloroform went back to par.

After a 15-hour day in Berlin I came down about midnight for a stroll, and, returning to the hotel, exchanged a word with the night clerk. A guest entered, registering from Norway. Twenty minutes later a police official came in, showed the clerk a very good photograph of the guest and was promptly shown upstairs.

"The system is marvelous," whispered the clerk.

"How his photo?" I inquired.

"Snapped en route without his knowing it and arrived by the same train."

"That's a sample of what I'll have to face as I leave Germany, eh?" I inquired.

"Never worry. They know all about you," he replied with a wise air, and that was all I could get him to say. However, at the German-Dutch frontier, I found myself politely passed without rigorous examination by the businesslike soldier-inspectors.

As we left Rotterdam, I considered what the fate of this and other North Sea ports would be should the Kaiser hold Antwerp permanently.

THE whole Nation must be a team in which each man must play the part for which he is fitted. We must all speak, act, and serve together.

WOODROW WILSON

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